Hastings Law Journal

Volume 72 | Issue 4 Article 2

4-2021

Commercial Law Intersections

Giuliano G. Castellano

Andrea Tosato

Articles

Commercial Law Intersections

GIULIANO G. CASTELLANO[†] & ANDREA TOSATO[†]

Commercial law is not a single, monolithic entity. It has grown into a dense thicket of subject-specific branches that govern a broad range of transactions and corporate actions. When one of such dealings or activities falls concurrently within the purview of two or more of these commercial law branches—such as corporate law, intellectual property law, secured transactions law, conduct and prudential regulation—an overlap materializes. We refer to this legal phenomenon as a commercial law intersection (CLI).

CLIs are ubiquitous. Notable examples include traditional commercial transactions, such as bank loans secured by shares, supply chain financing, or patent cross-licensing agreements, as well as nascent FinTech arrangements, such as blockchain-based initial coin offerings and other dealings in digital tokens.

CLIs present a multi-faceted challenge. The unharmonious convergence of commercial law branches generates failures in coordination that both increase transaction costs and distort incentives for market participants. Crucially, in the most severe cases, this affliction deters business actors from entering into the affected transactions altogether. The cries of scholars,

[†] Associate Professor, University of Hong Kong, Faculty of Law; Deputy Director, Asian Institute of International Financial Law (AIIFL).

[†] Associate Professor, University of Nottingham, School of Law; Lecturer, University of Pennsylvania, Law School.

We would like to thank Douglas W. Arner, Emilios Avgouleas, Marco Dell'Erba, Marek Dubovec, Carsten Gerner-Beuerle, Lucio Ghia, David A. Hoffman, Andrew Hinkes, Hideki Kanda, Gideon Parchomovsky, Carla Reyes, Paul Roberts, Teresa Rodríguez de las Heras Ballell, Ignacio Tirado, Charles W. Mooney Jr., Marc Moore, Ruth Plato-Shinar, Magda Raczynska, Kemar Richards, Dalvinder Singh, Tibor Tajti, Anna Veneziano, Catherine Walsh, and Simon N.M. Young for inspiring us with thought-provoking discussions and insightful comments offered during various stages of our work. We are grateful to the participants at the LLM Workshop of the Faculty of Laws of the University College of London (UCL) and at the University Research Priority Program (URPP) Financial Market Regulation Forum of the University of Zurich. We also owe a debt of gratitude to the student editors of the *Hastings Law Journal* for their comments, suggestions, and support in preparing this Article. All mistakes are our own. Giuliano G. Castellano further thanks the Central European University (CEU) for the gracious hospitality and the Hong Kong Research Grant Council through the General Research Fund (GRF project n. 17607119) for the generous support.

judges, and practitioners lamenting these issues have grown ever louder; yet methodical, comprehensive solutions remain elusive.

This Article endeavors to fill this void. First, it provides a comprehensive analysis of CLIs and the dynamics that give rise to coordination failures. Drawing from systems theory and jurisprudence, it then identifies the deficiencies of the most common approaches used to reconcile tensions between commercial law branches, before advancing the concepts of "legal coherence" and "unity of purpose" as the key to addressing such shortcomings. Finally, leveraging these insights, it formulates a normative blueprint, comprising a two-step method which aims to assist lawmakers, regulators, and courts in untangling the Gordian knot created by CLI coordination failures.

TABLE OF CONTENTS

INTRODUCTION

Commercial law is not a single, monolithic entity. Over time, it has evolved into a fragmented[1] bundle of subject-specific legal and regulatory regimes that govern transactions and corporate actions in the course of business.[2] Some of these branches of commercial law stem from ancient mercantile practices, such as the law of sales, the law of agency, secured transactions law, and corporate law.[3] Others have emerged in recent centuries to protect intellectual property, safeguard competition from unreasonable trade restraints and monopolies, and maintain the safety and soundness of the financial system.[4]

Reflecting the progressive retreat of the common law, commercial law branches are increasingly codified in statutes and delegated administrative enactments.[5] These sources of law are articulated in rules and principles. Rules are specific dispositions that are either prescriptive or proscriptive. Principles are broad indications that set out an objective which can be legal, economic,

1. The idea of legal fragmentation was originally birthed in public international law literature. *See* Int'l Law Comm'n, Rep. of the Study Group of the Int'l Law Comm'n, U.N. Doc. A/CN.4/L.682 (2006) [hereinafter Koskenniemi Report] (finalized by Martti Koskenniemi) (providing an exhaustive analysis of the notion of "fragmentation of international law"). *See generally* Eyal Benvenisti & George W. Downs, *The Empire's New Clothes: Political Economy and the Fragmentation of International Law*, 60 STAN. L. REV. 595 (2007); Martti Koskenniemi & Päivi Leino, *Fragmentation of International Law? Postmodern Anxieties*, 15 LJIL 553 (2002). For its application in commercial law in the sense of sectorial fragmentation, see Giuliano G. Castellano & Marek Dubovec, *Credit Creation: Reconciling Legal and Regulatory Incentives*, 81 LAW & CONTEMP. PROBS. 63 (2018) (focusing on the fragmentation of legal and regulatory regimes governing secured credit); Joshua Karton, *Sectoral Fragmentation in Transnational Contract Law*, 21 U. PA. J. BUS. L. 142 (2018) (describing how commercial law has split across sectorial lines both at domestic and international level); Andrea Tosato, *Intellectual Property License Contracts: Reflections on a Prospective UNCITRAL Project*, 86 U. CIN. L. REV. 1251 (2018) (analyzing the fragmentation of the legal framework governing IP licensing); Panagiotis Delimatsis, *The Fragmentation of International Trade Law*, 45 J. WORLD TRADE 87 (2011) (exploring the phenomenon of fragmentation in international trade law); ROY GOODE, COMMERCIAL LAW IN THE NEXT MILLENNIUM 3–8 (1998) (providing an historical account of the fragmentation of English commercial law).

2. In this Article, we adopt a functional and broad notion of "commercial law" encompassing all rules and principles, of whatever source, that govern non-consumer transactions and entrepreneurial activity. This conceptualization coincides with that traditionally adopted in civil law jurisdictions and also espoused by common law scholars such as Layton Register, in the United States, and Sir Roy Goode, in England. *See infra* notes 22–25 and related discussion in text.

3. *See infra* notes 29–39 and accompanying text.

4. *See infra* notes 40–61 and accompanying text.

5. On the codification of commercial law, see WILLIAM D. POPKIN, STATUTORY INTERPRETATION: A PRAGMATIC APPROACH ch. 1 (2018) (providing an exhaustive historical analysis); GOODE, *supra* note 1, at 3–7 (charting the trajectory of this phenomenon and describing the advent of commercial law codifications as the "pre-eminence of dispositive law"); Karl Llewellyn, *Why a Commercial Code?*, 22 TENN. L. REV. 779 (1953) (expounding the reasons for a commercial code in the United States); Charles A. Bane, *From Holt and Mansfield to Story to Llewellyn and Mentschikoff: The Progressive Development of Commercial Law*, 37 U. MIAMI L. REV. 351 (1983) (offering a U.S. perspective on this phenomenon).

social, or even moral in nature.[6] Through the lens of general systems theory,[7] commercial law branches can be understood as autonomous systems of rules and principles that supplement and derogate general doctrines of contract, tort, restitution, and property law, to realize determinate policy aims.[8]

When a transaction or a corporate action falls concurrently within the purview of two or more commercial law branches, an overlap materializes. We refer to this legal phenomenon as a commercial law intersection (CLI). For example, a transaction in which a bank extends a loan to a company and simultaneously takes a security interest in the debtor's shares, gives rise to a CLI between secured transactions law and the legal regimes regulating securities and banking activities.[9] In the past, CLIs concerned a narrow circle of market participants engaged in sophisticated transactions.[10] However, over the past three centuries, the intensifying fragmentation of commercial law, coupled with the ascent of novel types of business interactions have caused CLIs to

6. The terms "rules," "principles," and "standards" do not have fixed and universally accepted meanings in scholarly literature. In this Article, we use the terms "rules" and "principles" borrowing from the terminology adopted by John Braithwaite, *Rules and Principles: A Theory of Legal Certainty*, 27 AUSTRALIAN J. LEGAL PHIL. 47, 47–49 (2002), and Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1688–90 (1976), who speaks, on one hand, of "rules" and, on the other, of "standards" or "principles" or "policies." Notably our definition of "rules" and "principles" are also aligned with those of "rules" and "standards" formulated by Pierre Schlag, *Rules and Standards*, 33 UCLA L. REV. 379, 381–83 (1985); Lawrence A. Cunningham, *A Prescription to Retire the Rhetoric of "Principles-Based Systems" in Corporate Law, Securities Regulation, and Accounting*, 60 VAND. L. REV. 1409, 1418 (2007); HENRY M. HART & ALBERT M. SACKS, THE LEGAL PROCESS: BASIC PROBLEMS IN THE MAKING AND APPLICATION OF LAW 155–58 (1994). Ronald Dworkin also builds his theory of adjudication on the concepts of "rules" and "principles", though his definition of the latter is broader than our own. *See* RONALD DWORKIN, TAKING RIGHTS SERIOUSLY 22–23 (1977).

7. General systems theory seeks to elaborate principles that apply to systems in general irrespective of whether they are physical, biological, mathematical or sociological in nature. *See generally* Ludwig von Bertalanffy, *An Outline of General System Theory*, 1 BRITISH J. FOR PHIL. OF SCI. 134 (1950) (laying the foundations for general systems theory); Ludwig von Bertalanffy, *General System Theory*, 11 MAIN CURRENTS MOD. THOUGHT 75, 75–83 (1955) (framing more expansively his theory); ANATOL RAPOPORT, GENERAL SYSTEM THEORY: ESSENTIAL CONCEPTS & APPLICATIONS, at ii (1986) ("Proponents of general system theory purport to seek integrating principles sufficiently general to apply to many different contexts: physical, biological, psychological, and social.").

8. The application of general system theory to legal studies has a long-standing tradition. Most notably, the works of Gunther Teubner and Niklas Luhmann have been groundbreaking in advancing legal scholarship. *See* Gunther Teubner, *Introduction to Autopoietic Law*, *in* AUTOPOIETIC LAW: A NEW APPROACH TO LAW AND SOCIETY 1 (Gunther Teubner ed., 1987); Niklas Luhmann, *The Unity of the Legal System*, *in* AUTOPOIETIC LAW: A NEW APPROACH TO LAW AND SOCIETY, *supra*, at 12 (positing that law and society are composed of sub-systems and that communication among those is problematic); Andreas Fischer-Lescano & Gunther Teubner, *Regime-Collisions: The Vain Search for Legal Unity in the Fragmentation of Global Law Diversity or Cacophony: New Sources of Norms in International Law Symposium*, 25 MICH. J. INT'L L. 999 (2004); Gunther Teubner, *Autopoiesis in Law and Society: A Rejoinder to Blankenburg*, 18 LAW & SOC'Y REV. 291 (1984) [hereinafter Teubner, *Autopoiesis in Law and Society*] (arguing that the law is fragmented into a series of sub-systems engendering collisions among rules).

9. *See* STEVEN L. HARRIS & CHARLES W. MOONEY, SECURITY INTERESTS IN PERSONAL PROPERTY 434–43 (6th ed. 2016) (providing an exhaustive analysis the body of rules and principles that govern these transactions).

10. This is the case, for instance, of international sales of commodities. *See infra* notes 68–70 and accompanying text.

proliferate.[11] In fact, governmental and non-governmental organizations, both at national and international levels, have emphasized that overlaps between branches of commercial law are progressively surfacing across an expanding range of business sectors, and they affect materially the day-to-day operations and strategic choices of small and medium enterprises (SMEs), as well as multinational corporations.[12]

The spread of CLIs poses significant challenges. In principle, such convergences should generate composite regimes that synergistically enable persons to carry out their desired transaction. In practice, CLIs often suffer from failures in coordination. In some cases, the intersecting commercial law branches neither explicitly nor implicitly address the possibility of their overlap, spawning an ambiguous gap in the law that shrouds the transaction in question either partly or entirely. In others, the applicable rules and principles coalesce to form an incongruous legal framework that is either rife with internal conflicts (antinomies) or impedes the achievement of the parties' intended outcomes.

Gaps and incongruences are not uncommon in the law. Their presence in CLIs should not be deemed fatal. Indeed, legal scholars have long recognized that varying degrees of vagueness pervade most legal frameworks.[13] Considerations over the "optimal precision" of rules permeate the entire spectrum of law-making. Seeking a balance of transparency, accessibility, and congruence is paramount to the design of rules which are clear, flexible, and

11. On the proliferation and genesis and diffusion of transactions involving CLIs, see *infra* Part I.B.

12. U.N. COMM'N ON INT'L TRADE LAW (UNCITRAL), UNCITRAL PRACTICE GUIDE ON SECURED TRANSACTIONS, at 95, U.N. Sales No. E.20.V.6 (2020), https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-10910_e.pdf [hereinafter UNCITRAL PRACTICE GUIDE] (emphasizing "the need for closer coordination between the Model Law and the national prudential regulatory framework"); UNCITRAL, UNCITRAL LEGISLATIVE GUIDE ON SECURED TRANSACTIONS, at 1–2, 22, 46, 53, 80, U.N. Sales No. E.09.V.12 (2007), https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/09-82670_ebook-guide_09-04-10english.pdf; UNCITRAL, UNCITRAL LEGISLATIVE GUIDE ON SECURED TRANSACTIONS: SUPPLEMENT ON SECURITY RIGHTS IN INTELLECTUAL PROPERTY, at 1–3, U.N. Sales No. E.11.V.6 (2010), https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/10-57126_ebook_suppl_sr_ip.pdf; UNCITRAL, UNCITRAL MODEL LAW ON SECURED TRANSACTIONS, U.N. Sales No. E.17.V.1 (2016), https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-08779_e_ebook.pdf [hereinafter UNCITRAL MODEL LAW]; WORLD BANK, SECURED TRANSACTIONS, COLLATERAL REGISTRIES AND MOVABLE ASSET-BASED FINANCING: KNOWLEDGE GUIDE 4 (2019), https://openknowledge.worldbank.org/bitstream/handle/10986/32551/142346.pdf?sequence=4&isAllowed=y [hereinafter WB KNOWLEDGE GUIDE] (indicating the need for coordination between legal and regulatory regimes to promote financial inclusion) (technical contents prepared by Marek Dubovec with support from Giuliano G. Castellano). More recently, the problem of ensuring coordination between secured lending and prudential regulation has been highlighted in the report of the International Finance Corporation (IFC) of the World Bank Group, see GIULIANO G. CASTELLANO, PRATIBHA CHHABRA, JOHN W. WILSON & MAHESH UTTAMCHANDANI, INT'L FIN. CORP., WORLD BANK GRP., COORDINATING PRUDENTIAL REGULATION AND SECURED TRANSACTIONS FRAMEWORKS: A PRIMER (2020), http://documents1.worldbank.org/curated/en/739451604998793072/pdf/Coordinating-Prudential-Regulation-and-Secured-Transactions-Frameworks-A-Primer.pdf [hereinafter IFC REGULATORY PRIMER].

13. Vagueness in law is a topic that has fascinated legal scholars across numerous generations. An exhaustive exploration of this notion lies beyond the scope of the present inquiry. *See generally* TIMOTHY A.O. ENDICOTT, VAGUENESS IN LAW (2000); Jeremy Waldron, *Vagueness in Law and Language: Some Philosophical Issues*, 82 CALIF. L. REV. 509 (1994). For a collection of valuable attempts to link legal with philosophical thinking about vagueness, see Symposium, *Vagueness and Law*, 7 LEGAL THEORY 369 (2001).

aligned with overarching policy objectives.[14] For instance, the debate concerning the adoption of principle-based or rule-based approaches to regulate the integration of nascent technological advancements in finance (FinTech) echoes a deeper struggle to find equilibrium between financial innovation and the safety, soundness, and integrity of markets.[15]

Crucially, the particular gaps and incongruences that beset CLIs are problematic because they have far-reaching negative consequences. Albeit with scalar intensity, CLI coordination failures foist upon market participants an inadequate legal infrastructure; the applicable regime is either difficult to understand and operate or riddled with uncertainty regarding its outcomes. In all these cases, there is an increase in transaction costs and a distortion of incentives for the parties involved.[16] In the most severe cases, CLI coordination failures have a chilling effect which deters the parties from entering into the affected transactions altogether. Notably, scholars, judges, practitioners, and a comprehensive cohort of sectorial, governmental, and non-governmental

14. A seminal contribution to this debate was offered by Professor Colin Diver who noted that the design of administrative rules requires to consider a set of key tradeoffs between "transparency" (that is, the clarity of the words used), "accessibility" (that is, the ability to be applied to a variety of practical situations), and "congruence" (that is, the alignment with the policy aims it intends to achieve). *See* Colin S. Diver, *The Optimal Precision of Administrative Rules*, 93 YALE L.J. 65 (1983). Identifying an equilibrium between determinacy and flexibility of rules is a multidimensional issue that is echoed in the debates concerning the aptness of general principles and detailed rules to achieve policy aims. *See e.g.*, Neil Gunningham & Darren Sinclair, *Integrative Regulation: A Principle-Based Approach to Environmental Policy*, 24 LAW & SOC. INQUIRY 853 (1999) (focusing on environmental law issues and proposing to implement rules with a lower level of detail in order to achieve policy aims).

15. Douglas W. Arner, Jànos Barberis & Ross P. Buckley, *The Evolution of FinTech: A New Post-Crisis Paradigm?*, 47 GEO. J. INT'L L. 1271, 1311–13 (2016) (noting that principle-based regulation, while providing for more flexibility, might lack of sufficient clarity, whereas rule-based regulation might bolster investors' confidence towards nascent FinTech companies); *see also* Chris Brummer & Yesha Yadav, *Fintech and the Innovation Trilemma*, 107 GEO. L.J. 235, 244–64 (2019) (noting the tension between regulatory clarity and flexibility). For a policy analysis of the regulatory challenges in integrating digital assets and distributed ledger technology in the credit market, see WORLD BANK, DISTRIBUTED LEDGER TECHNOLOGY & SECURED TRANSACTIONS: LEGAL, REGULATORY AND TECHNOLOGICAL PERSPECTIVES—GUIDANCE NOTES SERIES: NOTE 2: REGULATORY IMPLICATIONS OF INTEGRATING DIGITAL ASSETS AND DISTRIBUTED LEDGERS IN CREDIT ECOSYSTEMS (2020), https://openknowledge.worldbank.org/bitstream/handle/10986/34008/Regulatory-Implications-of-Integrating-Digital-Assets-and-Distributed-Ledgers-in-Credit-Ecosystems.pdf?sequence=1&isAllowed=y (examining the regulatory implications of taking a variety of digital assets as collateral and adopting distributed ledger technology in secured transactions framework) (technical contents prepared by Giuliano G. Castellano).

16. Transaction costs refer to the costs involved in market exchanges, including the costs required for discovering market prices, as well as the writing and enforcing contracts. Transaction costs are distinguished from the costs of producing goods or services. Ronald Coase first introduced the concept of transaction costs in his seminal 1937 work. *See* R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937) (conceptualizing transaction costs and positing that firms emerge from cost-minimizing behavior, including transaction costs). Subsequently, he demonstrated that in situations where transactions costs are high, the initial allocation of legal rights has an impact on the efficiency of economic activities. *See* Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960) [hereinafter Coase, *The Problem of Social Cost*]. Oliver E. Williamson further developed the notion, indicating that each transaction produces three types of transactions costs related to monitoring, controlling, and managing transactions. *See* Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233 (1979).

organizations have repeatedly sounded the alarm about these issues.[17] Nevertheless, principled and systematic solutions have not been forthcoming.

This Article endeavors to fill this void. Making an original contribution to the broader understanding of commercial law, we highlight the key drivers fueling the proliferation of CLIs and decipher the factors that cause problematic overlaps between commercial law branches. Through these lenses, we formulate a normative method that aims to offer guidance to courts and administrative agencies grappling with the interpretation and application of rules and principles engendering CLI coordination failures. Furthermore, it aspires to provide lawmakers and regulators with a blueprint to realize harmonious synergies between intersecting commercial law branches when articulating or reforming legal and regulatory regimes.

As a preliminary step, we investigate whether the hermeneutical canons and rulemaking[18] approaches most commonly used to overcome gaps and incongruences in the law offer useful tools to tackle CLI coordination failures.[19] The focus of this analysis concentrates on interpretive and rulemaking methods designed to ensure consistency between multiple legal regimes, such as *lex specialis* and *lex superior*. Upon close scrutiny, we find that they all share a common shortcoming. Their application leads to one of the intersecting branches bluntly prevailing over the others in the CLI. Such an approach does not integrate harmoniously the intersecting branches; rather it spawns a markedly lopsided regime that exacerbates coordination failures and their negative consequences.

---

17. Scholars have repeatedly emphasized the need for a better coordination between branches of commercial law. *See, e.g.*, Catherine Walsh, *The Role of Party Autonomy in Determining the Third-Party Effects of Assignments: Of "Secret Laws" and "Secret Liens"*, 81 LAW & CONTEMP. PROBS. 181 (2018) (emphasizing the need for coordination across commercial law branches to expand access to credit); Giuliano G. Castellano & Marek Dubovec, *Global Regulatory Standards and Secured Transactions Law Reforms: At the Crossroad Between Access to Credit and Financial Stability*, 41 FORDHAM INT'L L.J. 531 (2018) (focusing on the intersection between secured transactions law and prudential regulation); Cunningham, *supra* note 6 (denouncing the complexities of the intersections of corporate law, securities regulation, and accounting). International organizations have indicated coordination issues as problematic. *See, e.g.*, the UNCITRAL PRACTICE GUIDE, *supra* note 12, at 9 (indicating that the applicability of secured transactions law in a given legal system might be restricted by other laws); WB KNOWLEDGE GUIDE, *supra* note 12, at 35 (referring to Castellano & Dubovec, *supra*, and indicating that the "lack of coordination between . . . areas of law could hinder both access to credit and financial stability"). The urgent need to coordinate commercial law branches affecting access to credit, pushed the World Bank to devise a reform strategy to ensure that secured transactions law reforms and prudential regulation regimes are not implemented unharmoniously. *See* IFC REGULATORY PRIMER, *supra* note 12, at 8 (citing this manuscript and adopting the notion of CLI conceptualized herein).

18. In this Article, the locution "rulemaking" is used broadly to indicate both the enacting of legislation and the adoption of regulation.

19. Though some commentators have drawn a distinction between the notions of "construing" and "interpreting" the law, in this Article we treat the two as coextensive. On interpretive methods to address gaps and incongruences, see AHARON BARAK, PURPOSIVE INTERPRETATION IN LAW 61–83 (Sari Bashi trans., 2005); EARL T. CRAWFORD, THE CONSTRUCTION OF STATUTES 263–71 (1940); OLIVER JONES, BENNION ON STATUTORY INTERPRETATION §§ 12–15 (7th ed. 2019); RUPERT CROSS, STATUTORY INTERPRETATION 48–69 (John Bell & George Engel eds., 3d rev. ed. 1995); FRANCIS BENNION, UNDERSTANDING COMMON LAW LEGISLATION: DRAFTING AND INTERPRETATION 41–54 (2001); 2 SUTHERLAND STATUTES & STATUTORY CONSTRUCTION §§ 36–37, 40 (Norman J. Singer & J.D. Shambie Singer eds., 7th ed. 2019).

Having identified the weaknesses of orthodox interpretive and rulemaking methods, we advance the view that "legal coherence" is the key notion to tackle CLI coordination failures.[20] Drawing from legal theory and philosophy of mathematics, we propose that the rules and principles forming a CLI should be construed to be simultaneously consistent with each other and their appertaining commercial law branches, and that such consistency should be achieved through a "unity of purpose."[21] To this end, we argue that such unity of purpose should be understood as the underlying socio-economic policies and political objectives that the CLI in question is intended to achieve. Moreover, in line with an ample body of jurisprudence theories, we posit that it should be extrapolated from a combined assessment of textual and contextual elements.

Building on this theoretical framework, we formulate a two-step method to address CLI coordination failures. The first step is deconstructive in nature. It involves identifying precisely the rules and principles that engender the CLI coordination failure under consideration, then appraising their systemic relevance within their appertaining commercial law branch. For this assessment, we propose a systemization that visualizes commercial law branches as tripartite spherical structures, comprised of a core, a middle sphere, and an outer sphere. We posit that each rule and principle of a commercial law branch can be classified within one of these three concentric spheres, in decreasing order of systemic relevance from the core to the outer sphere. The second step focuses on fostering legal coherence. We propose that, having established whether the rules and principles entangled in a CLI are related to the core, middle, or outer sphere of their respective branches, one must tailor the approach to resolution accordingly. Our analysis shows that instances which involve the core of one of the intersecting branches tend to require nuanced normative assessments. By contrast, coordination failures that only touch upon the middle and outer spheres of the intersecting branches present a path to legal coherence that is not as tortuous.

---

20. The body of scholarship exploring the notion of coherence is vast. *See, e.g.*, Jaap Hage, *Law and Coherence*, 17 RATIO JURIS 87 (2004); Stefano Bertea, *The Arguments from Coherence: Analysis and Evaluation*, 25 OXFORD J. LEGAL STUD. 369 (2005); Veronica Rodriguez-Blanco, *A Revision of the Constitutive and Epistemic Coherence Theories in Law*, 14 RATIO JURIS 212 (2001); Aldo Schiavello, *On "Coherence" and "Law": An Analysis of Different Models*, 14 RATIO JURIS 233 (2001); Aleksander Peczenik, *Law, Morality, Coherence and Truth*, 7 RATIO JURIS 146 (1994); Joseph Raz, *The Relevance of Coherence*, 72 B.U. L. REV. 273 (1992); S.L. Hurley, *Coherence, Hypothetical Cases, and Precedent*, 10 OXFORD J. LEGAL STUD. 221 (1990); Robert Alexy & Aleksander Peczenik, *The Concept of Coherence and Its Significance for Discursive Rationality*, 3 RATIO JURIS 130 (1990); Neil MacCormick, *Coherence in Legal Justification*, *in* THEORY OF LEGAL SCIENCE: PROCEEDINGS OF THE CONFERENCE ON LEGAL THEORY AND PHILOSOPHY OF SCIENCE, LUND, SWEDEN, DECEMBER 11–14, 1983, at 235 (Aleksander Peczenik, Lars Lindahl & Bert van Roermund eds., 1984); Kenneth J. Kress, *Legal Reasoning and Coherence Theories: Dworkin's Rights Thesis, Retroactivity, and the Linear Order of Decisions*, 72 CALIF. L. REV. 369 (1984); AULIS AARNIO, PHILOSOPHICAL PERSPECTIVES IN JURISPRUDENCE (1983). In the context of international law, see Mads Andenas & Ludovica Chiussi, *Cohesion, Convergence and Coherence of International Law*, *in* GENERAL PRINCIPLES AND THE COHERENCE OF INTERNATIONAL LAW 9, 9–34 (Mads Andenas, Malgosia Fitzmaurice, Attila Tanzi & Jan Wouters eds., 2019).

21. *See* MacCormick, *supra* note 20, at 238; Raz, *supra* note 20, at 284–87 (speaking of "unity of principle"); *infra* Part II.B.

This Article proceeds in three parts. In Part I, we describe the socio-economic factors that fueled the inception and rise of CLIs. This is followed by a systematic assessment of both the coordination failures that frequently surface when commercial law branches overlap, and the ensuing negative consequences for market participants. In Part II, we show that the gaps and incongruences that vex CLIs cannot be overcome by relying on interpretive methods that simplistically favor one of the intersecting branches over the other. We suggest instead that an approach centered on the notion of legal coherence is required. In Part III, we present our method for addressing CLI coordination failures. We expound the assessments to be conducted, the factors to be weighed, and the range of possible interventions that pave the path to attaining legal coherence.

I. THE EMERGENCE OF COMMERCIAL LAW INTERSECTIONS (CLIS)

There is no established definition of commercial law. In American scholarship, it was traditionally understood as "the body of rules regulating commerce," encompassing "the laws governing individuals engaged in the manufacture and distribution of objects" as well as "the laws regulating the association of capital . . . and the protection of industrial property such as patents, copyrights and trademarks."[22] More recently, in common parlance, the expression "commercial law" has "become synonymous . . . with the legal rules contained in the Uniform Commercial Code."[23] However, this colloquialism is emblematic of the impact of codification, rather than a conscious narrowing of the field. Likewise, English law scholars have long construed commercial law broadly and functionally. Notably, Sir Roy Goode has stated that "[commercial law] encompasses all those principles, rules and statutory provisions, of whatever kind and from whatever source, which bear on the private law rights and obligations of parties to commercial transactions, whether between themselves or their relationship with others."[24] In civil law jurisdictions, albeit not perfectly homogenously, commercial law has long been viewed as comprising the rules and principles that govern entrepreneurial activity and the enterprise in all its forms, including the laws of admiralty, agency, banking, competition, corporations, industrial and intellectual property, insolvency, insurance, negotiable instruments, sale, and secured credit.[25]

This Part begins by providing a detailed account of the process of fragmentation of commercial law and the multiplication of its constituent

22. Layton B. Register, *The Dual System of Civil and Commercial Law*, 61 U. PA. L. REV. 240, 241, 244 (1912–1913).

23. JONATHAN A. EDDY & PETER WINSHIP, COMMERCIAL TRANSACTIONS 1 (1985).

24. GOODE, *supra* note 1, at 8–9. This broad understanding of commercial law has long been widespread among English law scholars. *See* HENRY W. DISNEY, THE ELEMENTS OF COMMERCIAL LAW 1 (1908) ("'Commercial law' is an expression which is incapable of strict definition, but which is used to comprehend all that portion of the law of England which is more especially concerned with commerce, trade and business.").

25. *See* Denis Tallon, *Civil Law and Commercial Law*, *in* 8 INTERNATIONAL ENCYCLOPEDIA OF COMPARATIVE LAW ch. 2 (Konrad Zweigert ed., 1983) (providing a detailed comparative analysis of the conceptualization of commercial law in Latin American and European continental jurisdictions and its dialogue with the broader civil law).

strands. Thereafter, it expounds the dynamics that have led commercial law branches to intersect more often and, in turn, give rise to growing numbers of CLIs. This is followed by an investigation of both the coordination failures that regularly beset these intersections and their negative consequences.

A. THE FRAGMENTATION OF COMMERCIAL LAW

The global economic landscape has developed at an unprecedented pace over the past three centuries. The first, second, third, and fourth industrial revolutions have reshaped the factors of production and dynamics of consumption.[26] An ever-expanding cohort of participants are engaged in the demand and supply sides of increasingly international, interconnected, and competitive markets.[27] Coextensively, standardized, depersonalized, multipartite dealings have soared in number and relevance, facilitated by the advent of digitization, automation, data availability, and real-time processing capabilities.[28]

Confronted with novel activities, interactions, business organizations, and unprecedented capital flows, commercial law has responded by becoming increasingly fragmented into subject-specific branches.[29] At the domestic level, this phenomenon has been evidenced by the inexorable specialization of legal professionals and adjudicators, as well as the mounting recourse to codifications and delegated rulemaking.[30] At the international level, this splintering process has been reflected in the rise of subject-specific multilateral treaties and soft law instruments that, while promoting legal harmonization, have entrenched

---

26. *See generally* KLAUS SCHWAB, THE FOURTH INDUSTRIAL REVOLUTION (2017) (positing that the first industrial revolution (1760–1840) was characterized by the advent of steam engines and railroads; the second (late nineteenth century to early twentieth century) by mass production and electrification; the third (1960–1999) by semiconductors, mainframes, personal computing, and the internet; and the fourth (2000–present) by mobile internet, sensors, actuators, machine learning, and artificial intelligence).

27. *See generally* THOMAS L. FRIEDMAN, THE WORLD IS FLAT: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY (2005) (theorizing that globalization has opened markets to large segments of the world population who previously had no such access markedly and, in turn, levelled the competitive playing field); JOSEPH E. STIGLITZ, GLOBALIZATION AND ITS DISCONTENTS REVISITED: ANTI-GLOBALIZATION IN THE ERA OF TRUMP (2017) (describing the dislocations and displacements caused by globalization, standardization, digitization and automation, and analyzing their negative effects on determinate segments of society).

28. *See generally* 1 P.S. ATIYAH, THE RISE AND FALL OF FREEDOM OF CONTRACT (1979) (providing an historical account of the effect of these socio-economic developments on the cardinal common law doctrines governing commercial contracts); Friedrich Kessler, *Contracts of Adhesion—Some Thoughts About Freedom of Contract*, 43 COLUM. L. REV. 629 (1943) (analyzing the rise of consumer contracts of adhesion); David A. Hoffman, *Relational Contracts of Adhesion*, 85 U. CHI. L. REV. 1395 (2018) (exploring the impact that these developments have had in consumer contracts, analyzing "precatory terms" and the theorizing the emergence of "relational contracts of adhesion"); HEIN KÖTZ, EUROPEAN CONTRACT LAW 1–17 (Gill Mertens & Tony Weir trans., 2d ed. 2017) (highlighting these changes and emphasizing the progressively harmonized response of continental European contract law).

29. *See* Koskenniemi Report, *supra* note 1, ¶¶ 7–19 (noting the fragmentation of the law); Karton, *supra* note 1, at 162–90 (noting the fragmentation of commercial law along sectorial lines); Delimatsis, *supra* note 1, at 88–96 (noting the fragmentation of international trade law).

30. *See* GOODE, *supra* note 1 (charting the trajectory of this phenomenon and describing the advent of commercial law codifications as the "pre-eminence of dispositive law"); Bane, *supra* note 5, at 367–77 (offering a U.S. perspective on this phenomenon).

sectorial compartmentalization.[31] This fragmentation has advanced along two axes.

First, ancient regimes of commercial law have been compelled to renovate and evolve to keep pace with novel demands of economic actors. For example, the law of sales ventured beyond its Roman law and medieval core to accommodate the eighteenth-century expansion in maritime and fluvial trade;[32] incrementally, rules for executory agreements, implied warranties, and bona fide purchasers were forged, alongside interim remedies and market-based criteria for the quantification of expectation interest damages.[33] More recently, at a domestic level, laws of sales have had to grapple with bulk sales, electronic contracting, and goods with embedded software;[34] internationally, the acceleration of global trade has led to a unified legal framework for cross-border sales through binding multilateral treaties.[35]

In a similar vein, secured transactions law has undergone deep transformations to accommodate the ingenuity of credit markets. Ancient possessory security devices, such as pledges and liens,[36] have given way to non-

31. *See* 9 PHILIP R. WOOD, THE LAW AND PRACTICE OF INTERNATIONAL FINANCE (3d ed. 2019); 1 JAN DALHUISEN, DALHUISEN ON TRANSNATIONAL COMPARATIVE, COMMERCIAL, FINANCIAL AND TRADE LAW (7th ed. 2019); ROY GOODE, THE DEVELOPMENT OF TRANSNATIONAL COMMERCIAL LAW: POLICIES AND PROBLEMS (2018) (giving a comprehensive account of this phenomenon); ROY GOODE, HERBERT KRONKE, EWAN MCKENDRICK & JEFFREY WOOL, TRANSNATIONAL COMMERCIAL LAW: INTERNATIONAL INSTRUMENTS AND COMMENTARY (2d ed. 2012) (providing an encyclopedic overview of transnational commercial law instruments); BORIS KOZOLCHYK, COMPARATIVE COMMERCIAL CONTRACTS: LAW, CULTURE AND ECONOMIC DEVELOPMENT (2d ed. 2019) (providing a North American perspective).

32. *See* J.B. MOYLE, THE CONTRACT OF SALE IN THE CIVIL LAW: WITH REFERENCES TO THE LAWS OF ENGLAND, SCOTLAND AND FRANCE (Oxford, Clarendon Press 1892) (providing an exhaustive comparison of eighteenth-century sales laws in England, France, and Scotland).

33. This is not to suggest that many of these features did not exist in previous centuries, rather that they became prominent with the first industrial revolution. *See generally* 1 ATIYAH, *supra* note 28, chs. 8–16; Morton J. Horwitz, *The Historical Foundations of Modern Contract Law*, 87 HARV. L. REV. 917, 936–46 (1974) (arguing that the socio-economic impact of the first industrial revolution drove jurists to attack equitable conceptions of exchange as inimical to emerging contract principles such as expectation damages); A.W.B. Simpson, *The Horwitz Thesis and the History of Contracts*, 46 U. CHI. L. REV. 533 *passim* (1979) (criticizing Horowitz's thesis and suggesting that the transformation process of commercial contracts had deeper roots).

34. The history of the attempted revisions to U.C.C. Article 2 bear witness to these challenges. *See* Richard E. Speidel, *Revising UCC Article 2: A View from the Trenches*, 52 HASTINGS L.J. 607 (2001) (describing the reasons underlying attempts to revise U.C.C. Article 2); Henry Gabriel, *Uniform Commercial Code Article Two Revisions: The View of the Trenches*, 23 BARRY L. REV. 129 (2018) (examining attempts to revise U.C.C. Article 2 between 1999–2003).

35. *See generally* HENRY DEEB GABRIEL, CONTRACTS FOR THE SALE OF GOODS: A COMPARISON OF U.S. AND INTERNATIONAL LAW (2d ed. 2009) (providing a U.S. perspective); Larry A. DiMatteo, *The Curious Case of Transborder Sales Law: A Comparative Analysis of CESL, CISG, and the UCC*, *in* CISG VS. REGIONAL SALES LAW UNIFICATION: WITH A FOCUS ON THE NEW COMMON EUROPEAN SALES LAW 25, 25–57 (Ulrich Magnus ed., 2012) (providing a comparative analysis of the CISG, CESL, and the U.C.C.).

36. *See* John H. Wigmore, *The Pledge-Idea: A Study in Comparative Legal Ideas*, 10 HARV. L. REV. 389, 401–05 (1897) (analyzing the idea of pledge in the Pentateuch, the Mishna, and the Ghemara); FRITZ SCHULZ, CLASSICAL ROMAN LAW 400–27 (1951) (analyzing consensual secured transactions in classical Roman law); Roger J. Goebel, *Reconstructing the Roman Law of Real Security*, 36 TUL. L. REV. 29, 30–44 (1961) (offering comprehensive history of the evolution of Roman secured transactions law).

possessory interests recorded in public registries.[37] Meanwhile, floating liens have become common practice, effacing historically entrenched opposition.[38] Furthermore, both domestically and internationally, this branch of commercial law has moved away from its traditional arrangement into distinct security devices, veering towards a functional approach that treats homogenously all contractually created rights in personal property, for the purpose of securing an obligation.[39]

In corporate law, the balance between the interests of managers, shareholders, and a variety of stakeholders has profoundly changed over the past three centuries.[40] The burgeoning involvement of institutional investors in ownership structures as well as in the decision-making processes of modern corporations, has contributed to a shift in governance, styles, and structures.[41]

---

37. *See* George Lee Flint, Jr. & Marie Juliet Alfaro, *Secured Transactions History: The First Chattel Mortgage Acts in the Anglo-American World*, 30 WM. MITCHELL L. REV. 1403 (2004) (charting the history of non-possessory security interests in U.S. law); GRANT GILMORE, SECURITY INTERESTS IN PERSONAL PROPERTY 5–250 (1965) (providing an historical account of U.S. secured transactions law prior to U.C.C. Article 9).

38. *See* GILMORE, *supra* note 37, at 354–65 (charting the history of floating liens in the U.S. and explaining their treatment under U.C.C. Article 9); Peter F. Coogan, *Article 9 of the Uniform Commercial Code: Priorities Among Secured Creditors and the "Floating Lien"*, 72 HARV. L. REV. 838, 850–55, 873–74 (1959) (explicating the treatment of floating liens under U.C.C. Article 9).

39. At the international level, the preeminent examples of this shift are provided by the UNCITRAL Model Law and the Model Inter-American Law on Secured Transactions. *See* UNCITRAL MODEL LAW, *supra* note 12; Org. of Am. States [OAS], Model Inter-American Law on Secured Transactions (Feb. 8, 2002), http://www.oas.org/en/sla/dil/docs/secured_transactions_book_model_law.pdf. At the domestic level, see Giuliano G. Castellano & Andrea Tosato, *Personal Property Security Law: International Ambitions and Local Realities*, *in* INTERNATIONAL BUSINESS LAW 283, 307–37 (Lucio Ghia ed., 2d ed. 2019) (explaining the Italian legal framework); Teresa Rodríguez de las Heras Ballell & Jorge Feliu Rey, *Modernisation of the Law of Secured Transactions in Spain*, *in* SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES AND PRACTICE 417, 421–32 (Louise Gullifer & Orkun Akseli eds., 2016) (explaining the Spanish legal framework); Moritz Brinkmann, *The Peculiar Approach of German Law in the Field of Secured Transactions and Why It Has Worked (So Far)*, *in* SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES AND PRACTICE, *supra*, at 339, 340–44 (providing the German legal framework); LOUISE GULLIFER, GOODE AND GULLIFER ON LEGAL PROBLEMS OF CREDIT AND SECURITY (6th ed. 2018) (providing the English legal framework); MAREK DUBOVEC & LOUISE GULLIFER, SECURED TRANSACTIONS LAW REFORM IN AFRICA (2019) (providing an overview of African jurisdictions).

40. For an historical analysis of the evolution of corporate law and the main drivers for change, see P.M. Vasudev, *Corporate Law and Its Efficiency: A Review of History*, 50 AM. J. LEGAL HIST. 237 (2008); Robert B. Thompson, *Why New Corporate Law Arises: Implications for the Twenty-First Century*, *in* THE CORPORATE CONTRACT IN CHANGING TIMES: IS THE LAW KEEPING UP? 3 (Steven Davidoff Solomon & Randall Stuart Thomas eds., 2019) (noting that corporate law has progressively acquired different attitudes towards key aspects of the life of an incorporated entity, such as its legal personality and autonomy); Carla L. Reyes, *If Rockefeller Were a Coder*, 87 GEO. WASH. L. REV. 373 (2019) (offering an insightful forecast about the impact that blockchain-based decentralized autonomous organizations might have in the near future on business organizations law and corporate law more broadly).

41. *See* Zohar Goshen & Sharon Hannes, *The Death of Corporate Law*, 94 N.Y.U. L. REV. 263, 263–65 (2019) (arguing that "[t]he transformation of American equity markets from retail to institutional ownership has relocated control over corporations from courts to markets and has led to the death of corporate law") (footnote omitted); Yesha Yadav, *Too-Big-to-Fail Shareholders*, 103 MINN. L. REV. 587, 598 (2018) (highlighting the significance of institutional shareholders in bank governance as a source of "private . . . monitoring"); Paul H. Edelman, Randall S. Thomas & Robert B. Thompson, *Shareholder Voting in an Age of Intermediary Capitalism*, 87 S. CAL. L. REV. 1359, 1395–97 (2014) (noting that voting behavior of institutional shareholders has been

Corporate failures, the credit crunch of 2007–2008, the global financial crisis of 2009, the European debt crisis of 2011–2012, as well as a widespread demand for greater accountability of large private entities have spawned, *inter alia*, legal and regulatory interventions to pierce the corporate veil.[42] The result has been a reconfiguration of the reach and applicability of corporate law.

Second, commercial law has expanded to govern segments of the business world that either did not exist previously or did not warrant special legislation. For example, in the eighteenth century, print commerce and steam-powered mechanization spurred the seminal enactment of statutes that conceptualized copyright and patents as personal proprietary rights.[43] A hundred years later, the expansion of consumer markets propelled the adoption of the legal framework for registered trademarks to eradicate the use of confusing trade signs among competitors.[44] Over time, intellectual property (IP) law has shown creativity and adaptability in response to electrification, electronics, communications networks, and digitization.[45] Concurrently, from the late nineteenth century, the intensity in cross-border trade of IP products has fueled the creation and expansion of a network of international conventions for copyrights, patents, and trademarks.[46]

In a similar vein, at the close of the nineteenth century, modern antitrust law emerged to subdue trusts, pools, and other concentrations,[47] in both

influenced by regulatory changes requiring them to cast their votes in the best interests of stakeholders); John C. Coffee, Jr., *Preserving the Corporate Superego in a Time of Stress: An Essay on Ethics and Economics*, 33 OXFORD REV. ECON. POL'Y 221, 229–48 (2017) (arguing that recent changes in corporate governance have been fueling a style of corporate behavior that is characterized by the pursuit of short-term profits); Carla L. Reyes, Nizan Geslevich Packin & Benjamin P. Edwards, *Distributed Governance*, 59 WM. & MARY L. REV. ONLINE 1, 16–24 (2017) (discussing how distributed ledger technology might enable the rise of novel business organizations in which traditional directors and officers are no longer required).

42. This point, for instance, emerges from the rebuttal of the principle of "shareholders supremacy" replaced by the "stakeholders supremacy" in the context of regulated financial institutions. *See infra* note 224.

43. A vast body of scholarship expounds the causal link between technological innovation and modern copyright and patents law. *See, e.g.*, Joanna Kostylo, *From Gunpowder to Print: The Common Origins of Copyright and Patent*, *in* PRIVILEGE AND PROPERTY: ESSAYS ON THE HISTORY OF COPYRIGHT 21 (Ronan Deazley, Martin Kretschmer & Lionel Bently eds., 2010). Specifically, on copyright, see Oren Bracha, *United States Copyright, 1672–1909*, *in* RESEARCH HANDBOOK ON THE HISTORY OF COPYRIGHT LAW 335 (Isabella Alexander & H. Tomás Gómez-Arostegui eds., 2016) (providing a history of U.S. copyright protection). For patents, see Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J. 1255 (2001).

44. *See* Lionel Bently, *The Making of Modern Trade Mark Law: The Construction of the Legal Concept of Trade Mark (1860–1880)*, *in* TRADE MARKS AND BRANDS: AN INTERDISCIPLINARY CRITIQUE 3 (Lionel Bently, Jennifer Davis & Jane C. Ginsburg eds., 2008) (charting the rise of modern trademarks law).

45. *See* Paul A. David, *Intellectual Property Institutions and the Panda's Thumb: Patents, Copyrights, and Trade Secrets in Economic Theory and History*, *in* GLOBAL DIMENSIONS OF INTELLECTUAL PROPERTY RIGHTS IN SCIENCE AND TECHNOLOGY 19 (Mitchel B. Wallerstein, Mary Ellen Mogee & Roberta A. Schoen eds., 1993).

46. For a comprehensive overview of these international instruments and an exhaustive bibliography, see GRAEME B. DINWOODIE, WILLIAM O. HENNESSEY & SHIRA PERLMUTTER, INTERNATIONAL INTELLECTUAL PROPERTY LAW AND POLICY (2d ed. 2008).

47. From the seventeenth century, Anglo-American common law developed rules that voided restraint of trade contracts on public policy grounds, if they unreasonably constrained a person's freedom to exercise their profession. *See* 8 WILLIAM HOLDSWORTH, A HISTORY OF ENGLISH LAW 56 (2d ed. 1937). These doctrines lay

Canada[48] and the United States.[49] In the twentieth century, shepherded by successive economic theories,[50] this branch of commercial law crafted substantive and procedural tools to safeguard "the competition process"[51] from anticompetitive vertical and horizontal agreements, and monopolistic practices.[52] In the twenty-first century, antitrust legislation has spread globally, yet continues to lack a unitary international framework, thus remaining an interrelated set of heterogenous domestic laws.[53]

Over the course of the past century, the previously described changes to corporate law were matched by the exponential growth of financial regulation. The divide between the banking, insurance, and investment sectors faded, requiring regulatory and supervisory coordination. Subsequently, the financial and corporate crises of the twenty-first century defined the global regulatory agenda, leading to an ulterior expansion of the role attributed to administrative agencies in the governance of financial markets.[54] At present, financial regulation comprises an heterogenous set of special rules and principles that can be divided into conduct of business regulation (conduct regulation)[55] and

---

the groundwork for subsequent Canadian and U.S. antitrust laws. *See* Brian Cheffins, *The Development of Competition Policy, 1890–1940: A Re-Evaluation of a Canadian and American Tradition*, 27 OSGOODE HALL L.J. 449 (1989); Herbert Hovenkamp, *The Sherman Act and the Classical Theory of Competition*, 74 IOWA L. REV. 1019 (1989).

48. An Act for the Prevention and Suppression of Combinations Formed in Restraint of Trade, S.C. 1889, c. 41 (Can.); *see also* Michael Bliss, *Another Anti-Trust Tradition: Canadian Anti-Combines Policy, 1889–1910*, 47 BUS. HIST. REV. 177 (1973); Jamie Benidickson, *The Combines Problem in Canadian Legal Thought, 1867–1920*, 43 U. TORONTO L.J. 799, 850 (1993).

49. *See* An Act to Protect Trade and Commerce Against Unlawful Restraints and Monopolies, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1–7); Laura Phillips Sawyer, *US Antitrust Law and Policy in Historical Perspective*, OXFORD RESEARCH ENCYCLOPEDIA OF AMERICAN HISTORY, Dec. 23, 2019, at 1 (providing an historical overview of the evolution of antitrust law in the United States).

50. *See* RUDOLPH J.R. PERITZ, COMPETITION POLICY IN AMERICA: HISTORY, RHETORIC, LAW (rev. ed. 2001) (offering a chronological analysis of the successive political and economic theories that have influenced U.S. antitrust law); ALISON JONES, BRENDA SUFRIN & NIAMH DUNNE, JONES AND SUFRIN'S EU COMPETITION LAW: TEXT, CASES, AND MATERIALS 13–76 (7th ed. 2019) (discussing the policies and theories underlying E.U. competition law).

51. David J. Gerber, *Comparative Competition Law*, *in* THE OXFORD HANDBOOK OF COMPARATIVE LAW 1169, 1181–91 (Mathias Reimann & Reinhard Zimmermann eds., 2d ed. 2019) (using this expression to describe broadly the combined subject matter of North American antitrust law and E.U. competition law).

52. *See generally* RICHARD A. POSNER, ANTITRUST LAW (2d ed. 2001); HERBERT HOVENKAMP, PRINCIPLES OF ANTITRUST §§ 1.3, 11.4 (2017); JONES ET AL., *supra* note 50, at 13–76.

53. *See* DAVID J. GERBER, GLOBAL COMPETITION: LAW, MARKETS, AND GLOBALIZATION 119 (2010); Anu Bradford, Adam S. Chilton, Christopher Megaw & Nathaniel Sokol, *Competition Law Gone Global: Introducing the Comparative Competition Law and Enforcement Datasets*, 16 J. EMPIRICAL LEGAL STUD. 411, 411–13 (2019).

54. For instance, the Dodd-Frank Act established a new administrative agency, the Financial Stability Oversight Council, to protect the stability of the financial system. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of U.S.C.); *see also infra* note 198. For a critical analysis of the role of this new agency, see Hilary J. Allen, *Putting the "Financial Stability" in Financial Stability Oversight Council*, 76 OHIO ST. L.J. 1087 (2015).

55. *See* Andrew F. Tuch, *Conduct of Business Regulation*, *in* THE OXFORD HANDBOOK OF FINANCIAL REGULATION 538 (Niamh Moloney, Eilís Ferran & Jennifer Payne eds., 2015) (offering a definition of conduct regulation and charting both its emergence and expansion).

prudential regulation.[56] Conduct regulation is chiefly concerned with both protecting market integrity and fostering an ethical business culture, generally referred to as a "culture of compliance."[57] Prudential regulation encompasses a variety of regimes, broadly categorized in micro- and macro-prudential regulation.[58] Micro-prudential regulation is concerned with the solvency of individual financial firms; for instance, in the United States, its implementation for national banks is mandated to the Office of the Comptroller of the Currency (OCC).[59] Macro-prudential regulation aims to maintain the stability of the financial system as a whole, thus curbing systemic risk;[60] in the United States, this task is the primary charge of the Financial Stability Oversight Council (FSOC), instituted by the Dodd-Frank Act.[61]

---

56. On the definition prudential regulation, see ROSS CRANSTON, EMILIOS AVGOULEAS, KRISTIN VAN ZWIETEN, CHRISTOPHER HARE & THEODORE VAN SANTE, PRINCIPLES OF BANKING LAW 31 (3d ed. 2018) ("[P]rudential regulation has undergone seismic changes in the post-2008 period, at least in the USA, EU, and the UK, as a result of the crisis.").

57. The former president of the Federal Reserve Bank of New York noted that "[c]ulture relates to the implicit norms that guide behavior in the absence of regulations or compliance rules—and sometimes despite those explicit restraints." William Dudley, Pres. & CEO, Fed. Rsrv. Bank of N.Y., Remarks at the Workshop on Reforming Culture and Behavior in the Financial Services Industry: Enhancing Financial Stability by Improving Culture in the Financial Services Industry (Oct. 20, 2014), http://www.fsb.org/wp-content/uploads/Dudley-Enhancing-Financial-Stability-by-Improving-Culture-in-the-Financial-Services-Industry.pdf. The Financial Stability Board (FSB) has made ethics a component of its regulatory framework. *See* FIN. STABILITY BD., GUIDANCE ON SUPERVISORY INTERACTION WITH FINANCIAL INSTITUTIONS ON RISK CULTURE: A FRAMEWORK FOR ASSESSING RISK CULTURE 1–2 (2014), https://www.fsb.org/wp-content/uploads/140407.pdf; *see also* Dan Awrey, William Blair & David Kershaw, *Between Law and Markets: Is There a Role for Culture and Ethics in Financial Regulation?*, 38 DEL. J. CORP. L. 191 (2013) (examining how law and markets might engender cultural and ethical constraints).

58. In a famous speech delivered while he was serving as the General Manger of the Bank for International Settlements and Chairman of the hitherto Financial Stability Forum, Andrew Crockett noted that "the macro-prudential dimension focuses on the risk of correlated failures," whereas "[t]he micro-prudential dimension . . . considers each institution in its own right, is thus not concerned with correlations per se." Andrew D. Crockett, Gen. Manager of the Bank for Int'l Settlements & Chairman of the Fin. Stability F., Remarks Before the Eleventh International Conference of Banking Supervisors, Marrying the Micro- and Macro-Prudential Dimensions of Financial Stability (Sept. 21, 2000), https://www.bis.org/speeches/sp000921.htm.

59. The OCC is also tasked to supervise the implementation of conduct regulation. For an overview of the supervisory framework for national banks, see HAL S. SCOTT & ANNA GELPERN, INTERNATIONAL FINANCE: TRANSACTIONS, POLICY, AND REGULATION 286–97 (22d ed. 2018); RICHARD SCOTT CARNELL, JONATHAN R. MACEY & GEOFFREY P. MILLER, THE LAW OF FINANCIAL INSTITUTIONS 92–93 (6th ed. 2017). The idea of separating conduct and prudential regulation, thus adopting a regulatory design that is similar to the one adopted in other jurisdictions, such as the United Kingdom, has been advanced in various instances. *See, e.g.*, DEP'T OF TREASURY, BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE 137–38 (2008), https://www.treasury.gov/press-center/press-releases/documents/blueprint.pdf.

60. On the regulatory challenges posed by systemic risk, see Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 198–206 (2008) (noting that systemic risk arises from a "tragedy of the commons" demanding specific regulatory interventions); Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1389–1401 (2011) (arguing for a regulatory approach that addresses systemic risk by reducing complexity in the financial system).

61. *See supra* note 53. For an analysis of the approach adopted by the FSOC to pursue its mandate, see Daniel Schwarcz & David Zaring, *Regulation by Threat: Dodd-Frank and the Nonbank Problem*, 84 U. CHI. L. REV. 1813, 1849–64 (2017) (indicating that the ample discretion attributed to the FSOC is a powerful regulatory tool, deterring firms and keeping regulators accountable).

The preceding discourse has shown that the fragmentation of commercial law has progressively spawned a multiplicity of distinct regimes. Even though they stem from shared legal roots, they have flourished independently into separate branches of commercial law. Each branch, in turn, constitutes an autonomous system of rules and principles characterized by an internal logic that ensures its continuity and development over time. Albeit to a varying degree, such systems are both self-contained[62] and self-referential.[63] They are self-contained in the sense that they establish a special regime for the dealings and activities within their remit, and produce outcomes that differ from those that would otherwise flow from general law doctrines.[64] They are self-referential in that they address gaps and incongruences pursuant to a logic that almost exclusively references inwardly their own endogenous rules and principles rather than exogenous legal elements.[65]

Therefore, commercial law branches may be described as autonomous systems of rules and logical deductions that are exceptional in nature. They supplement or derogate the laws of contract, tort, restitution, and property or another commercial law branch. Financial regulation offers a lucid example of these features. Rights and obligations between financial institutions and their customers are largely grounded in deeply-rooted common law doctrines, further supplemented by corporate law statutes and ad hoc regulatory provisions. In the banking context, banks and depositors operate within a debtor-creditor framework.[66] Yet, financial regulation subjects banks to a special regime that differs from that applicable to other corporate debtors, requiring them to prioritize the interests of depositors over those of shareholders and enact special risk-management processes.[67]

---

62. The notion of "self-contained regime" has its roots in international law. *See* Martti Koskenniemi (Chairman of the Int'l Law Comm'n Study Group), *Study on the Function and Scope of the Lex Specialis Rule and the Question of "Self-Contained Regimes"*, ¶¶ 314–30, U.N. Doc. ILC(LVI)/SG/FIL/CRD.1 (2004); Koskenniemi Report, *supra* note 1, ¶¶ 123–37 (expounding the multifarious meanings which the notion of "self-contained regime" has assumed in international public law). Among international law scholars, this notion has spawned a contentious debate regarding whether a system of rules can ever be completely severed from general law. *See* Bruno Simma & Dirk Pulkowski, *Of Planets and the Universe: Self-Contained Regimes in International Law*, 17 EUROPEAN J. INT'L L. 483 (2006) (describing this debate).

63. The notion of a "self-referential" system has roots both in biology of cognition and social systems theory. *See* HUMBERTO R. MATURANA & FRANCISCO J. VARELA, AUTOPOIESIS AND COGNITION: THE REALIZATION OF THE LIVING (1980) (proposing that self-referentiality is the quality of a system to build for itself the components of which it consists); 2 NIKLAS LUHMANN, THEORY OF SOCIETY 49–54 (Rhodes Barrett trans., Stanford Univ. Press 2013) (1997) (theorizing that a system is self-referential if it "itself constitutes the elements that compose it as functional unities"); Teubner, *Autopoiesis in Law and Society*, *supra* note 8, at 293–95 (building on Luhmann's theory and emphasizing the circular relationship between legal decisions and normative rules).

64. We do not intend to suggest that commercial law branches exist in isolation and are disconnected from general law, rather we emphasize that they supplement and derogate general doctrines of contract, tort and restitution. Consistently with international law scholars and legal philosophers, we recognize that special regimes can never be entirely severed from general law. *See* Simma & Pulkowski, *supra* note 62, at 492–93 (cogently arguing that no system can be completely severed from general law).

65. *See* Teubner, *Autopoiesis in Law and Society*, *supra* note 8, at 295–96.

66. *See infra* notes 212–214 and accompanying text.

67. *See infra* Part III.A.2.

B. THE BIRTH AND PROLIFERATION OF COMMERCIAL LAW INTERSECTIONS

A CLI arises from the partial overlap of two or more commercial law branches. This occurs when a transaction possesses traits and attributes that fall concurrently within the purview of two or more branches of commercial law. The coming into contact of distinct self-contained systems generates a new sub-system of rules and logical deductions. Its scope is narrower than that of any of the converging branches, and its span is limited to the extent of their overlap. Its function is to provide commercial actors with a legal regime that enables them to carry out the transaction in question according to their idiosyncratic preferences.

CLIs have evolved and proliferated in lockstep with the fragmentation of commercial law. In the nineteenth century, transactions giving rise to CLIs were few and relatively uncomplicated. For example, international sales of commodities—typically "cost, insurance, freight" (CIF)[68] or "free on board" (FOB)[69]—in which the laws of sales, insurance, and maritime transportation converged at numerous junctures.[70]

During the twentieth century, CLIs multiplied and their complexity escalated. For instance, domestic corporations transmuted into regional and multinational conglomerates that operate through joint ventures and subsidiaries enjoined by a nexus of contracts that create intersections among corporate, agency, IP and, often, antitrust laws.[71] Similarly, globalization rendered the financing of supply chains materially reliant on dealings that entwine the laws of sales, insurance, and multi-modal transportation with, *inter alia*, the laws of banking, documents of title, secured transactions, and factoring.[72]

---

68. Legal historians identify *Tregelles v. Sewell* (1862) 158 Eng. Rep. 600; 7 H&N 575 (Eng.), as one of the first reported cases involving an international CIF transaction. *See* Edward A. Craighill, Jr., *Sales of Goods on C.I.F. Terms*, 6 VA. L. REV. 229, 230 (1919) (charting the history of CIF contracts in U.S. law).

69. For the modern legislative definition of FOB contracts, see U.C.C. § 2-319 (AM. L. INST. & UNIF. L. COMM'N 2020). The first reported case of an FOB sale is *Wackerbarth v. Masson*, (1812) 170 Eng. Rep. 1378; 3 Camp. 270 (Eng.). For the history of FOB contracts, see Ademuni-Odeke, *Insurance of F.O.B. Contracts in Anglo-American and Common Law Jurisdictions Revisited: The Wider Picture*, 31 TUL. MAR. L.J. 425, 430–32 (2007).

70. For the modern legislative definition of CIF contracts, see U.C.C. §§ 2-320 to 2-321. In CIF transactions, a seller agrees to deliver the goods to a carrier, to arrange for their transportation, to take the customary insurance on them for the buyer's benefit against the risks of the voyage, to prepay or credit the freight, and to tender the shipping documents to the buyer. The buyer agrees to pay the purchase price upon presentation of the shipping documents. *See* Philip W. Thayer, *C.I.F. Contracts in International Commerce*, 53 HARV. L. REV. 792, 792–93 (1940) (analyzing CIF contracts and emphasizing the intersection between the laws of sales, insurance, maritime transport, and payments).

71. For an overview of these CLIs, see RALPH H. FOLSOM, MICHAEL P. VAN ALSTINE, MICHAEL D. RAMSEY & MATTHEW P. SCHAEFER, INTERNATIONAL BUSINESS TRANSACTIONS: A PROBLEM-ORIENTED COURSEBOOK 865–1082 (13th ed. 2019); DETLEV F. VAGTS, WILLIAM S. DODGE, HANNAH L. BUXBAUM & HAROLD HONGJU KOH, TRANSNATIONAL BUSINESS PROBLEMS 257–493 (6th ed. 2019).

72. For example, see Boris Kozolchyk, *Supply Chain Financing, Straight Bills of Lading and Standby Letters of Credit*, 2 GEO. MASON J. INT'L COM. L. 100, 118–22 (2011) (expounding the issues presented by straight bills of lading in supply chain financing and exploring the intersection between U.C.C. Articles 5 and 9, and banking law); Abhinayan Basu Bal, *Can UNCITRAL Instruments Advance Supply Chain Finance to Benefit*

Most recently, the twenty-first century has witnessed a further surge in CLIs fueled by technological advancements. The inexorable spread of the internet through wireless mobile devices, coupled with the rise of big data, cloud computing, artificial intelligence, distributed ledger technology, and digital assets has ushered a wave of novel business models and commercial dealings. In this landscape, intersections between the laws of payments, banking, securities, and agency feature prominently, as emblematically demonstrated by the case of "stablecoins."[73] More generally, digital assets engender CLIs that involve the laws of secured transactions and insolvency,[74] reaching into foundational aspects of property law and the law of obligations.[75]

Small and Medium Enterprises?, *in* 4 MODERNIZING INTERNATIONAL TRADE LAW TO SUPPORT INNOVATION AND SUSTAINABLE DEVELOPMENT 156, 156–66 (2017), https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/17-06783_ebook.pdf (exploring the intersection between the laws governing electronic transferable records, carriage of goods at sea, and secured transactions law); EURO BANKING ASS'N, SUPPLY CHAIN FINANCE: EBA EUROPEAN MARKET GUIDE 44–66 (2014), https://www.abe-eba.eu/media/azure/production/1544/eba-market-guide-on-supply-chain-finance-version-20.pdf (mapping the commercial law overlaps that arise in "receivable finance" and "inventory finance"). Notably, the relevance of the intersection between the law governing assignments of intangibles and financial regulation has emerged markedly, in the context of international initiatives aimed at promoting access to credit through factoring activities. In particular, coordination between rules governing the assignment of receivables and regulatory requirements has been highlighted as a crucial issue by the International Institute for the Unification of Private Law (UNIDROIT) in the *travaux preparatoire* for its prospective Model Law on Factoring. *See* Int'l Inst. for the Unification of Priv. L. [UNIDROIT], Factoring Model Law Working Group: First Session, at 11, Study LVIII A–W.G.1–Doc. 3 (2020), https://www.unidroit.org/english/documents/2020/study58a/wg01/s-58a-wg-01-03-rev01-e.pdf (indicating that contractual rights of payment are affected by regulatory requirements).

73. According to the Financial Stability Board, stablecoin refers to a digital asset that "aims to maintain a stable value relative to a specified asset, or a pool or basket of assets." FIN. STABILITY BD., REGULATION, SUPERVISION AND OVERSIGHT OF "GLOBAL STABLECOIN" ARRANGEMENTS 9 (2020), https://www.fsb.org/wp-content/uploads/P131020-3.pdf. Although stablecoins are still in their infancy, the prospect of privately issued, global stablecoins prompted policymakers and commentators to highlight that such digital assets would raise concerns in multiple regulatory areas. *See* Anton Didenko, Dirk A. Zetzsche, Douglas W. Arner & Ross P. Buckley, *After Libra, Digital Yuan and COVID-19: Central Bank Digital Currencies and the New World of Money and Payment Systems* 18–19 (European Banking Inst., Working Paper No. 65, 2020), http://dx.doi.org/10.2139/ssrn.3622311; J.S. Nelson, *Cryptocommunity Currencies*, 105 CORNELL L. REV. 909, 925–28, 928 n.94 (2020); Douglas Arner, Raphael Auer & Jon Frost, *Stablecoins: Risks, Potential and Regulation* 2–5 (BIS Working Papers, Paper No. 905, 2020), https://www.bis.org/publ/work905.pdf; Marco Dell'Erba, *Stablecoins in Cryptoeconomics from Initial Coin Offerings to Central Bank Digital Currencies*, 22 N.Y.U. J. LEGIS. & PUB. POL'Y 1 (2019). Regarding the CLIs emerging from the use of stablecoins as collateral, see WORLD BANK, *supra* note 15, at 25–30.

74. On the CLIs engendered by the use of digital assets as collateral, see *infra* note 168 and accompanying text. For preliminary analyses of the legal challenges posed by digital assets in insolvency proceedings, see Matthias Haentjens, Tycho De Graaf & Ilya Kokorin, *The Failed Hopes of Disintermediation: Crypto-Custodian Insolvency, Legal Risks and How to Avoid Them*, 2020 SING. J. LEGAL STUD. 526 (2020) (highlighting that bankruptcies of "crypto-custodians" give rise to tensions between different branches of commercial law); Miriam R. Albert & J. Scott Colesanti, *Cryptocurrency Meets Bankruptcy Law: A Call for Creditor Status for Investors in Initial Coin Offerings*, 36 GA. ST. U. L REV. 233 (2020) (suggesting that the interface between securities and bankruptcy law has to be recast in light of the challenges presented by initial coin offering); Jannis Sarra & Louise Gullifer, *Crypto-Claimants and Bitcoin Bankruptcy: Challenges for Recognition and Realization*, 28 INT'L INSOLVENCY REV. 233 (2019) (mapping the junctures at which digital assets engender tension between bankruptcy law and other commercial law branches).

75. On the property law issues generally created by digital assets, see generally J.G. Allen, *Property in Digital Coins*, 8 EUROPEAN PROP. L.J. 64 (2019) (exploring the conceptual basis of property in digital coins in

Coextensively, intensified efforts to regulate the finance sector have further bolstered the frequency of CLIs. The involvement of financial institutions and activities that are regulated necessarily implies the emergence of a CLI in which aspects traditionally governed under commercial law intersect with rules and principles concerned with regulated firms and activities. Conduct regulation, for instance, regulates the behavior of financial institutions towards the public in order to avert the risk of misconduct that could hinder the functioning of (and, thus, the confidence in) the financial system.[76] These rules stem from the need to protect public interests and are codified in a variety of provisions, including those designed to combat money laundering activities,[77] limit fraudulent practices, and other attempts to manipulate markets.[78] Licensing requirements and product approval procedures are also part of the wide spectrum of rules defining conduct regulation; their implementation necessitates coordination with the corporate and contractual dimension of business transactions.[79] Furthermore, the intersection between administrative law provisions and corporate governance is epitomized by the regimes imposing limits to compensation for executive officers.[80] In this context, financial institutions are deemed to live in an "era of regulatory compliance," in which regulatory requirements complement, or supplant, corporate law precepts.[81]

---

terms of a new category of property); David Fox, *Cryptocurrencies in the Common Law of Property*, *in* CRYPTOCURRENCIES IN PUBLIC AND PRIVATE LAW 139 (David Fox & Sarah Green eds., 2019) (suggesting that the category of property at common is sufficiently flexible to accommodate digital assets such as cryptocurrencies).

76. By and large, conduct of business regulation reflects the policy objective of protecting market integrity and is concerned with how firms operate their businesses. *See infra* note 195; *see also* JOHN ARMOUR, DAN AWREY, PAUL DAVIES, LUCA ENRIQUES, JEFFREY GORDON, COLIN MAYER & JENNIFER PAYNE, PRINCIPLES OF FINANCIAL REGULATION 63 (2016) ("Functionally, they can be thought of as mandatory terms of the contractual relationship between the client and the intermediary, responding to agency costs.").

77. In the United States, the core statute setting anti-money laundering rules is the Bank Secrecy Act, Pub. L. No. 91-508, 84 Stat. 1114 (1970) (codified as amended in scattered sections of 12 U.S.C., 18 U.S.C., and 31 U.S.C.), with the amendments introduced by the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (Patriot) Act of 2001, Pub. L. No. 107-56, 115 Stat. 272 (codified as amended in scattered sections of 31 U.S.C.).

78. On the different practices used to manipulate markets, see David C. Donald, *Regulating Market Manipulation Through an Understanding of Price Creation*, 6 NAT'L TAIWAN U. L. REV. 55, 70–71 (2011) (noting that in trade-based manipulative conduct "[i]ntegrity is challenged by trades that, in the context of a given market structure and a given market atmosphere, put pressure on the price creation process without any relationship to quality").

79. These set of rules are commonly known as "entry regulation" and "product regulation." *See* ARMOUR ET AL., *supra* note 76, at 74–75. On the intersection between financial regulation and corporate governance, see Danny Busch, Guido Ferrarini & Gerard van Solinge, *Governing Financial Institutions: Law and Regulation, Conduct and Culture*, *in* GOVERNANCE OF FINANCIAL INSTITUTIONS 3, 13 (Danny Busch, Guido Ferrarini & Gerard van Solinge eds., 2019) ("[R]egulators rely on corporate governance as a complement to financial supervision, which explains why regulation is on the rise.").

80. *See infra* note 225.

81. *See* Sean J. Griffith, *Corporate Governance in an Era of Compliance*, 57 WM. & MARY L. REV. 2075, 2075 (2016) (noting that "[c]ompliance is the new corporate governance" and arguing that the impact of compliance requirements is changing the way corporations operate making traditional corporate theory outdated); *see also* Miriam Hechler Baer, *Governing Corporate Compliance*, 50 B.C. L. REV. 949 (2009) (noting

As a result of their proliferation, CLIs have come to involve market participants of all guises rather than remaining the exclusive domain of sophisticated actors. This development has been especially apparent regarding credit dealings designed to facilitate inclusive access to finance for small and medium enterprises (SMEs), individuals, and startups, as these transactions increasingly feature the convergence of many branches of commercial law. For example, SMEs operating in the agricultural sector—both in developed and developing economies—do not infrequently rely on warehouse receipts financing.[82] In these transactions, individual farmers and cooperatives obtain working capital from financial institutions by offering warehouse receipts as collateral to secure their repayment obligations;[83] in these dealings multiple intersections occur between the laws of agency, documents of title, insurance, secured transactions, and financial regulation.

International organizations have implicitly recognized the strategic relevance of CLIs in the pursuit of development policies. Both the UN Commission on International Trade Law (UNCITRAL) and the World Bank Group have emphasized that the achievement of the Sustainable Development Goals[84] necessitates law reforms which ensure the seamless and synergetic confluence of different commercial law branches.[85] Emblematically, the UNCITRAL Practice Guide to the Model Law on Secured Transactions has noted that coordination between contract law, property law, intellectual property law, negotiable instruments law, insolvency law, civil procedure law, and secured transactions law is of critical importance to an inclusive regime for access to credit.[86] In addition, the same instrument features a chapter devoted to

the expansion of the compliance industry, following major scandals and misconduct, but questioning the effectiveness of new compliance regimes).

82. For an overview of the widespread use warehouse receipts financing in developing and developed economies, see Int'l Ass'n for the Unification of Priv. L. [UNIDROIT], *Model Law on Warehouse Receipts*, Study 83–W.G.1–Doc. 4 (2020), https://www.unidroit.org/english/documents/2020/study83/wg01/s-83-wg01-04-e.pdf; Food & Agric. Org. of the U.N. [FAO], *Designing Warehouse Receipt Legislation: Regulatory Options and Recent Trends* 1–5 (2015), http://www.fao.org/3/i4318e/i4318e.pdf; World Bank Grp. [WBG], *A Guide to Warehouse Receipt Financing Reform: Legislative Reform* 1–17 (2016), https://openknowledge.worldbank.org/handle/10986/25189.

83. *See* Marek Dubovec & Adalberto Elias, *A Proposal for UNCITRAL to Develop a Model Law on Warehouse Receipts*, 22 UNIF. L. REV. 716, 718–19 (2017) (highlighting commercial law branches overlaps in warehouse receipts financing transactions and suggesting the need for an international soft-law instrument to promote modernization and harmonization).

84. The international instruments adopted by UNCITRAL and the law reforms facilitated by the World Bank aim to establish a legal infrastructure to foster an inclusive access to credit towards the realization of the overarching goal of eradicating poverty by 2030. *See* G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development (Sept. 25, 2015); WB KNOWLEDGE GUIDE, *supra* note 12, at 4; IFC REGULATORY PRIMER, *supra* note 12, at 10 ("[C]oordination between secured transactions law and financial regulation is key to promote secured lending and ensure that . . . reforms achieve their full potential.").

85. *See supra* note 17.

86. *See* UNCITRAL PRACTICE GUIDE, *supra* note 12, ¶¶ 23–25.

assisting regulated financial institutions in the coordination of secured transactions law and prudential regulation.[87]

C. COORDINATION FAILURES

CLIs can be problematic. Almost two decades ago, reflecting on the fragmentation of the global legal order along social and economic sectoral lines, Fischer-Lescano and Gunter Teubner presciently hypothesized that "should the law of a global society become entangled within sectoral interdependences, a wholly new form of conflicts law will emerge."[88] Similarly, the fragmentation of commercial law, combined with the proliferation of transactions that fall concurrently within the remit of multiple commercial law branches has spawned the phenomenon of CLIs. On occasion, these convergences produce harmonious coalescences that facilitate both voluntary exchanges and the efficient allocation of capital. With escalating frequency, however, CLIs are hindered by failures in coordination of varying severity. We posit that these failures can be divided into two classes.

The first class comprises coordination failures stemming from gaps in the law.[89] In such instances, intersecting branches do not govern the CLI at hand expressly or implicitly but leave it instead either partly or entirely shrouded in silence. For example, transactions in which a registered trademark is used as collateral engender a CLI between secured transactions law and trademarks law.[90] Assuming hypothetically that a person first grants a security interest in one of their trademarks to a creditor, and then subsequently assigns this same trademark to another person, it is well-established that Article 9 governs the

87. *Id.* ¶¶ 365–72; *see also* Castellano & Dubovec, *supra* note 17 (providing the first systematic analysis of the coordination failures between secured transactions law and financial regulation and for suggestions on for their possible resolution).

88. Fischer-Lescano & Teubner, *supra* note 8, at 1000 (describing such collisions as "intersystemic conflicts law" that are "derived not from collisions between the distinct nations of private international law, but from collisions between distinct global social sectors").

89. Legal gaps (or *lacunae*) have been the subject of a vast body of scholarship. This Article is only concerned with the issue of gaps in dispositive sources of law, such as legal statutes and administrative enactments. *See* BARAK, *supra* note 18, at 66–72 (analyzing the nature of statutory gaps and providing an exhaustive bibliography); Marijan Pavčnik, *Why Discuss Gaps in the Law?*, 9 RATIO JURIS 72 (1996) (providing a map the issues created by statutory gaps); FERNANDO ATRIA, ON LAW AND LEGAL REASONING 76–87 (2002) (examining a broad range of theories to address statutory gaps). This Article is not concerned with the issue of whether there are social contexts in which no law applies. *See* HANS KELSEN, PURE THEORY OF LAW 242–46 (Max Knight trans., Univ. of Cal. Press 1967) (1934) (identifying this issue and presenting his theory that the law is gapless). Neither is this Article concerned with the issue of gaps in contracts, wills, and other private law instruments. *See* Omri Ben-Shahar, "*Agreeing to Disagree": Filling Gaps in Deliberately Incomplete Contracts*, 2004 WIS. L. REV. 389, 393–99 (2004) (providing an exhaustive map of the theoretical issues presented by gaps in contracts); Heinz Strohbach, *Filling Gaps in Contracts*, 27 AM. J. COMP. L. 479, 486–87 (1979) (analyzing comparatively contract gaps in the context of arbitration).

90. For an analysis of the legal framework governing the use of trademarks as collateral, see Thomas M. Ward, *The Perfection and Priority Rules for Security Interests in Copyrights, Patents, and Trademarks: The Current Structural Dissonance and Proposed Legislative Cures*, 53 ME. L. REV. 391, 440–48 (2001); Xuan-Thao Nguyen, *Collateralizing Intellectual Property*, 42 GA. L. REV. 1, 24–29 (2007); John L. Mesrobian & Kenneth R. Schaefer, *Secured Transactions Based on Intellectual Property*, 72 J. PAT. & TRADEMARK OFF. SOC'Y 827, 849–56 (1990).

creation of this security interest, its enforceability against third parties (perfection), and priority against other secured creditors. It is equally uncontentious that the Lanham Act[91] governs trademark assignments. However, neither Article 9 nor the Lanham Act address conflicts between secured creditors and trademarks transferees. It is unclear whether a perfected security interest in a registered trademark prevails over either a subsequent assignment of this same trademark recorded in the Trademarks Register or even a prior unrecorded transfer. It is equally unsettled whether recording a security interest in the Trademarks Register serves as actual or constructive notice for third parties. These issues are entirely uncertain.[92]

The second class encompasses coordination failures arising from incongruences.[93] This occurs when the combined application of the rules and principles of the intersecting commercial law branches result in a regime that is either contradictory, dysfunctional, or a combination of the two. For example, the relevant provisions may establish prescriptions and proscriptions that are either partially or entirely conflicting. Alternatively, the respective scope of application of the rules and standards in question may be unclear. Still differently, the regime hatched by the intersecting commercial law branches may, holistically considered, impede the parties from achieving their intended outcomes for the transactions in question. A case in point is offered by the CLI between secured transactions law and financial regulation. In the United States, when a federally chartered bank[94] secures a commercial loan against an item of personal property, the ensuing transaction attracts the attention of both Article 9 and Title 12 (Banks and Banking) of the Code of Federal Regulations.[95] In this scenario, an incongruence may ensue because secured transactions law qualifies this dealing as secured credit, whereas the applicable regulatory regime might treat it as unsecured due to the encumbered asset not possessing the required attributes.[96]

---

91. Lantham Act, ch. 540, 60 Stat. 427 (1946) (codified as amended in scattered sections of 15 U.S.C.).

92. *See* Ward, *supra* note 90, at 443–45; Nguyen, *supra* note 90, at 24–26.

93. In this Article, we use the term "incongruence" in a sense similar to that used by Colin Diver for administrative lawmaking, albeit adapting it to the context of CLIs coordination failures. *See* Diver, *supra* note 14, at 67.

94. In this case, banks are chartered and regulated by the OCC under the National Bank Act, 12 U.S.C. § 1 (2018).

95. *See* U.C.C. § 9-109 (AM. L. INST. & UNIF. L. COMM'N 2020); Banks and Banking, 12 C.F.R. §§ 1–199 (2020).

96. Only certain types of collateral can be effectively used to reduce credit risk and, thus, capital requirements. Specifically, the bank must have a first-priority interest on the collateral which must be in the form of:

> (i) Cash on deposit with the national bank or Federal savings association . . . ;
>
> (ii) Gold bullion;
>
> (iii) Long-term debt securities that are not resecuritization exposures and that are investment grade;
>
> (iv) Short-term debt instruments that are not resecuritization exposures and that are investment grade;
>
> (v) Equity securities that are publicly traded;

CLI coordination failures have diverse negative consequences, the intensity of which is scalar rather than binary. In some cases, they reduce legal certainty, as parties are required to contend with a framework the outcomes of which are difficult to predict *ex ante*. In others, they increase complexity by spawning a regime that is challenging both to comprehend and operate. In others still, insufficient or flawed coordination between intersecting commercial law branches yields an incoherent body of rules that does not align with reasonable expectations. In all these cases, there is a distortion of incentives for the involved parties.

Crucially, CLI coordination failures raise transaction costs. They render more onerous the negotiation process, the drafting of contracts, the gathering of the information required to discover prices, and the settling of disputes. The relative burden of these transaction costs is proportional to the intensity of the coordination failures from which they emanate. When they are minimal, the ensuing transaction costs will likely be a manageable burden that parties can offset comfortably through the benefits obtained from their voluntary exchange. However, when CLI coordination failures are substantial, they carry heftier transaction costs that will push parties to contemplate alternative otherwise less attractive dealings.[97] In the most severe cases, CLI coordination failures will have a chilling effect, generating costs of such magnitude as to completely deter parties from entering into these transactions.[98]

Another illustrative example of these issues is provided by CLIs involving financial regulation and secured transactions law. As a general proposition, capital adequacy standards compel banks to maintain, at any point in time, a minimum level of capital (or regulatory capital) that is composed of a bank's own funds—which include shareholders' equity and equity-like instruments—and is relative to both the total assets of the bank and its actual exposure to risks.[99] The resulting framework is risk-based, as a higher portion of a bank's

---

(vi) Convertible bonds that are publicly traded; or

(vii) Money market fund shares and other mutual fund shares if a price for the shares is publicly quoted daily.

12 C.F.R. § 3.2; *see also id.* § 3.37 (setting forth rules on collateralized transactions).

97. This phenomenon is a direct consequence of the problem highlighted by Ronald Coase and positing that when transactions costs are excessively high, the optimal allocation of resources might never occur. See generally *supra* note 16, and, in particular, see Coase, *The Problem of Social Cost*, *supra* note 16, at 27.

98. This point emerges clearly once coordination failures are examined through the analytical lenses of Williamson's seminal works. Certain CLIs involve transactions that are "nonstandard" and require investments that cannot be determined by market-aggregate dynamics. *See* Williamson, *supra* note 16, at 246–47 (classifying commercial transactions based on their "frequency," which can be "one-time, occasional, and recurrent," and on their investments characteristics, which can be "nonspecific, mixed, and idiosyncratic"). Typically, parties value such transactions due to their design features that, in principle, allow to address specific business needs. However, as uncertainties increase sharply in nonstandard transactions, the incentives to enter into such dealings weaken. *See id.* at 248. If the legal framework does not reduce such uncertainties, parties might "sacrifice valued design features in favor of a more standardized" arrangement. *Id.* at 251. Therefore, when CLI coordination failures result into an excessive level uncertainty, parties might prefer not to enter into such transactions altogether.

99. *See* SCOTT & GELPERN, *supra* note 59, at 504–11; ARMOUR ET AL., *supra* note 76, at 290–301.

own funds is needed to finance riskier loans.[100] Therefore, banks are incentivized to reduce their exposure to credit risk in order to maximize their return on equity.[101] To this end, banks may reduce capital requirements in various fashions, including the adoption of credit risk mitigants, such as security interests. However, as loans secured with collateral other than financial collateral are subject to the same level of capital requirements attributed to unsecured lending, banks might not be incentivized to extend loans secured with any other personal property.[102] Such a paradox affects the structure of incentives in credit markets, as legal and regulatory requirements affect lending behavior in an uneven manner.[103] Capital regulation only applies to banking businesses; while any prospective lender can take advantage of the broad applicability of secured transactions law. Given that capital adequacy standards induce banks to invest in operations that require less capital than asset-based lending to SMEs, the coordination failure under consideration unwittingly favors the extension of such a form of credit outside the banking system.[104]

The use of unregistered copyrights as collateral gives rise to a CLI between secured transactions law and copyright law which presents similar issues.[105] The prevailing judicial view is that the creation of security interests in all types of copyright (both registered and unregistered) is governed by Article 9.[106] Perfection and priority of security interests in registered copyrights is subject to the Copyright Act and the Copyright Registry.[107] By contrast, perfection and

100. This means that regulatory capital connects risk to banks' equity (or, more generally, own funds). *See* Castellano & Dubovec, *supra* note 1, at 71.

101. *See* ANAT ADMATI & MARTIN HELLWIG, THE BANKERS' NEW CLOTHES 110–11 (2013) (noting that the assumptions of the Modigliani-Miller theorem on corporate finance are not met because deposit guarantees schemes as well as favorable tax treatment for debt instruments result in a lower cost of debt); *see also* Castellano & Dubovec, *supra* note 1, at 71 (noting that the regulatory risk-weights "are the pivot steering the choices of individual banks, as they determine the costs of funding for the extension of credit"). The tendency of banks to maximize return on equity by reducing the cost of capital has also been associated with regulatory arbitrage strategies. *See* David Jones, *Emerging Problems with the Basel Capital Accord: Regulatory Capital Arbitrage and Related Issues*, 24 J. BANKING & FIN. 35 (2000); Erik F. Gerding, *The Dialectics of Bank Capital: Regulation and Regulatory Capital Arbitrage*, 55 WASHBURN L.J. 357 (2016).

102. *See supra* note 96 and accompanying text.

103. *See* Castellano & Dubovec, *supra* note 1, at 83.

104. *See* Castellano & Dubovec, *supra* note 17, at 586 (noting that capital adequacy standards play a role in shaping "a market for secured credit in which assets or transactions deemed too risky to serve as eligible credit protection are instead employed by non-bank institutions"). This tendency might fuel "shadow banking" activities, intended as credit intermediation activities occurring partially or completely outside the banking system. *See* Steven L. Schwarcz, *Regulating Shadow Banking*, 31 REV. BANKING & FIN. L. 619, 620–23 (2012) (offering an analysis of the origins of shadow banking and its regulatory challenges).

105. *See* Ward, *supra* note 90, at 414–29 (assessing the use of copyright as collateral under Article 9); Alice Haemmerli, *Insecurity Interests: Where Intellectual Property and Commercial Law Collide*, 96 COLUM. L. REV. 1645, 1667–68 (1996) (noting the uncertainties surrounding the use of copyright as collateral); Peter L. Choate, *Belts, Suspenders, and the Perfection of Security Interests in Copyrights: The Undressing of the Contemporary Creditor*, 31 LOY. L.A. L. REV. 1415, 1436–42 (1998) (discussing the anomalies of the perfection regime governing security interests in copyright).

106. *In re* Avalon Software Inc., 209 B.R. 517, 522–23 (Bankr. D. Ariz. 1997); *see In re* World Auxiliary Power Co., 303 F.3d 1120, 1127–28 (9th Cir. 2002) (confirming implicitly *In re Avalon Software Inc.*); *see also* Ward, *supra* note 90, at 414–16, 424–29 (critically analyzing these decisions).

107. *See In re* Peregrine Ent., Ltd., 116 B.R. 194, 199–203 (C.D. Cal. 1990).

priority of security interests in unregistered copyright fall within the remit of Article 9 and its filing system.[108] This bifurcation brings with it a range of difficulties. Most notably, the holder of an unregistered copyright can choose—at any moment in time—to record it in the Copyright Registry and, thus, transform it into a registered copyright; however, neither Article 9 nor the Copyright Act address coherently the impact of this transition regarding security interests.[109] This lacunose CLI concocts a regime in which if an unregistered copyright is subsequently registered, any security interest previously perfected under Article 9 in this asset becomes ineffective against third parties. Consequently, such security interests must be re-perfected pursuant to the rules of the Copyright Act and will be defeated by a competing claim that has been recorded in the Copyright registry in the intervening time.[110] This coordination failure renders the use of unregistered copyrights as collateral unappealing for potential secured creditors, due to being exposed to the risk of losing third party effectiveness.[111] It disincentivizes market participants from entering into secured transactions involving these assets, producing a chilling effect that ultimately depresses their value.

II. UNDERSTANDING COORDINATION FAILURES: THE LEGAL THEORY PERSPECTIVE

Legal scholars, lawmakers, courts, and administrative agencies have long grappled with gaps and incongruences in the law.[112] A vast scholarship has been devoted to establishing when silence in a legal text can be said to constitute a gap, and, in turn, to the construction canons, legislative and regulatory approaches that courts, judges, and administrative agencies should follow when confronted with such lacunae.[113] Incongruences in the law have been the subject of even greater scrutiny.[114] A range of interpretive and rulemaking methods have been formulated, both to overcome contradictions that emerge within a single

108. *See In re World Auxiliary Power Co.*, 303 F.3d at 1131–32; Stacey G. Jernigan, Marty L. Brimmage, Jr. & Ian T. Peck, *The Perfection of Liens in Unregistered Copyrights:* Aerocon *and Beyond*, 28 OKLA. CITY U. L. REV. 645 *passim* (2003) (providing an exhaustive analysis of this decision).

109. *See* Justin M. Vogel, Note, *Perfecting Security Interests in Unregistered Copyrights: Preemption of the Federal Copyright Act and How Filing in Accordance with Article 9 Leads to the Creation of a Bankruptcy "Force Play"*, 10 AM. BANKR. INST. L. REV. 463, 465–73 (2002).

110. *See id.* at 490–91 (describing perfection of security interests in unregistered copyright as illusory); Ward, *supra* note 90, at 428–29 (arguing for legal reform).

111. It should be noted that the coordination failure under consideration does affect a secured creditor's claim under Article 9 to any proceeds stemming from the transfer of an encumbered unregistered copyright. Nevertheless, such proceeds might not always be available, or they might be difficult to trace.

112. *See, e.g.*, JONES, *supra* note 19; 2 SUTHERLAND STATUTES & STATUTORY CONSTRUCTION, *supra* note 19, §§ 36–37, 40; BENNION, *supra* note 19, at 42–49; BARAK, *supra* note 19, at 66–73; CRAWFORD, *supra* note 19, at 269; CROSS, *supra* note 19, at 65–80.

113. *See* BARAK, *supra* note 19, at 66–73; CRAWFORD, *supra* note 19, at 269.

114. For the lawmaking perspective, see Gunningham & Sinclair, *supra* note 14; Diver, *supra* note 14. For an interpretive perspective, see 2 SUTHERLAND STATUTES & STATUTORY CONSTRUCTION, *supra* note 19, § 37; BARAK, *supra* note 19, at 74–80; CRAWFORD, *supra* note 19, at 263–68.

law,[115] and to resolve conflicts between rules and standards stemming from distinct legal sources.[116] Similarly, the extent to which courts may either ignore or deviate from rules and principles, the application of which would result in dysfunctional or even absurd outcomes, has been the subject of a vivacious debate.[117]

This Part reviews first the extent to which orthodox rulemaking approaches and hermeneutical canons that focus on consistency are helpful in overcoming the gaps and incongruences at the heart of CLI coordination failures. Finding this to be a barren path, we turn to the notion of legal coherence for recourse and posit that it should be placed at the heart of any method that seeks to overcome the challenges presented by the convergence of commercial law branches.

A. VENTURING BEYOND LEGAL CONSISTENCY

Gaps and incongruences in the law are problematic for both legal interpretation and rulemaking. Regarding the former, scholars and lawmakers have elaborated hermeneutical methods which rely on an array of norms and conventions to deal with antinomies and lacunae. Grounded in diverse theories, these interpretation tools offer elastic standards and presumptions through which substantive meaning is extrapolated from the text, structure, context, subject matter, and purpose of the law under consideration.[118] In the context of rulemaking, a variety of approaches have been developed to minimize the occurrence and impact of gaps and incongruences.[119] Looking to form, care is devoted to designing, developing, and compiling drafts the wording and structure of which facilitates understanding, and, consequently, implementation and compliance.[120] With respect to substance, lawmakers and regulators often include mechanisms specifically intended to resolve latent antinomies and

115. *See* BARAK, *supra* note 19, at 74–75 (offering a comparative overview of the hermeneutical approaches followed in different jurisdictions); CRAWFORD, *supra* note 19, at 263–64 (examining a range of canons of interpretation adopted by U.S. courts).

116. *See* BARAK, *supra* note 19, at 75–77; CRAWFORD, *supra* note 19, at 264–66.

117. *See* JONES, *supra* note 19, § 286 (discussing the limits of the "consequentialist constructions" and suggesting that their origin can be traced back to the consequential construction); BARAK, *supra* note 19, at 79–80; CROSS, *supra* note 19, at 16 (discussing the "golden rule"); BENNION, *supra* note 19, at 41–49 (exploring consequentialist and rectifying constructions).

118. The literature exploring theories of legal interpretation is vast. *See* POPKIN, *supra* note 5, ch. 2–3 (providing an exhaustive analysis of theories of interpretation); D. NEIL MACCORMICK & ROBERT S. SUMMERS, INTERPRETING STATUTES: A COMPARATIVE STUDY (Routledge 2016) (1991) (providing a recent comparative study of this topic).

119. *See generally* HELEN XANTHAKI, DRAFTING LEGISLATION: ART AND TECHNOLOGY OF RULES FOR REGULATION (2014); BENNION, *supra* note 19; TOBIAS A. DORSEY, LEGISLATIVE DRAFTER'S DESKBOOK: A PRACTICAL GUIDE (2006); 1 V.C.R.A.C. CRABBE, LEGISLATIVE DRAFTING (1993).

120. This point emerges also from the key attributes of rules enucleated by Colin Diver in relation to the "transparency" of legal rules. *See* Diver, *supra* note 14, at 66–79; *see also* HELEN XANTHAKI, THORNTON'S LEGISLATIVE DRAFTING ch. 9 (Bloomsbury Pro. 5th ed. 2013); XANTHAKI, *supra* note 119, ch. 3–6; BENNION, *supra* note 19, ch. 6.

lacunae; notably, this is frequently realized through provisions that expressly enshrine into law well-established hermeneutical canons.[121]

The notion of consistency is the common denominator underpinning a broad range of interpretive and rulemaking methods intended to address gaps and incongruences in the law.[122] This notion in law resonates with that formulated in philosophy of mathematics and logic theory.[123] Internal consistency demands that a system of rules and logical deductions is devoid of self-contradictions. External consistency requires that the rules and logical deductions of one system are mutually compatible with those of another.[124] Accordingly, hermeneutical canons and rulemaking approaches that focus on internal consistency target endogenous contradictions and ambiguities within a single system of rules,[125] whereas those that focus on external consistency tackle gaps and incongruences between distinct systems of rules.[126]

In addressing CLI coordination failures, the limitations of traditional methods that focus exclusively on internal consistency are readily apparent. Branches of commercial law, while increasing in sophistication and expanding their outreach, have been developed to ensure internal consistency through rules and logical deductions that are, by design, compatible. Hence, canons of interpretation aimed at promoting internal consistency are structurally unsuited to the resolution of coordination failures in CLIs, where compatibility issues emerge across multiple branches, rather than within a single one.

At first glance, canons of interpretation aimed at ensuring external consistency between distinct systems of rules might appear as more efficacious tools in the context of CLIs. Among them, *lex specialis* and *lex superior* deserve special attention. The former establishes that when two laws cover the same subject matter, the one specifically devoted to the matter under consideration (*lex specialis*) should be favored over that with a general remit (*lex generalis*).[127]

---

121. *See* BENNION, *supra* note 19, ch. 9. For an example of one such statutory rule designed to resolve antinomies, see *infra* notes 130–134 and accompanying text.

122. *See* BARAK, *supra* note 19, at 61–80; 2 SUTHERLAND STATUTES & STATUTORY CONSTRUCTION, *supra* note 19, §§ 36–37, 40; CRABBE, *supra* note 119, at 153; Luc J. Wintgens, *Legislation as an Object of Study of Legal Theory: Legisprudence*, *in* LEGISPRUDENCE: A NEW THEORETICAL APPROACH TO LEGISLATION 9, 35–37 (Luc J. Wintgens ed., 2002).

123. In classic deductive logic, consistency implies the lack of contradictions. *See* ALFRED TARSKI, INTRODUCTION TO LOGIC: AND TO THE METHODOLOGY OF DEDUCTIVE SCIENCES 136 (Olaf Helmer trans., Dover Publ'ns, Inc. 1995) (1941) ("[C]onsistency excludes the possibility that any problem may be decided in two ways, that is, both affirmatively and negatively . . . ."). Distinction is generally made between internal and external consistency, as further elaborated in this Part. *See infra* note 139.

124. *See* DOUGLAS R. HOFSTADTER, GÖDEL, ESCHER, BACH: AN ETERNAL GOLDEN BRAID 94–95 (Basic Books 1999) (1979); Hillel J. Bavli, *Applying the Laws of Logic to the Logic of Law*, 33 FORDHAM URB. L.J. 937, 937–39 (2006).

125. *See* BARAK, *supra* note 19, at 74–75; CRAWFORD, *supra* note 19, at 263–64.

126. *See* BARAK, *supra* note 19, at 75–77; CRAWFORD, *supra* note 19, at 264–66.

127. The *lex specialis* canon of construction has deep roots. *See* 2 HUGO GROTIUS, DE JURE BELLI AC PACIS LIBRI TRES [ON THE LAW OF WAR AND PEACE THREE BOOKS] bk. 2, ch. XVI, sec. XXIX (James Brown Scott ed., Francis W. Kelsey trans., Oxford Univ. Press 1925) (1646) (noting that special rules should be favored over general rules when they are either more closely related to the given subject matter or provide a more effective

The latter resolves clashes between laws by giving primacy to the one holding the highest rank within the relevant legal system.[128] Neither approach offers a satisfactory pathway to tackle CLI coordination failures.

With regard to *lex specialis*, the identification of a special-general relationship is problematic. In CLIs, the intersecting commercial law branches are conventionally not in a relationship of subordination; rather they overlap and engender a new system of rules and principles that governs a determinate transaction or corporate action.[129] Coordination failures stem from gaps and incongruences between determinate rules, rather than the intersecting branches in their entirety. Therefore, the special-general relationship is situational and cannot be determined *a priori*. For example, financial regulation articulates sets of rules that govern determinate financial activities, which are concurrently subject to contract and corporate law. For certain key aspects, such as shareholders' voting rights, corporate law is the *lex specialis*; whereas, financial regulation is deemed *lex generalis*. By contrast, in matters concerning the composition and responsibilities of the board of directors, this special-general relationship is inverted.

Equally, *lex superior* supplies imperfect tools to address CLI coordination failures. Commercial law branches typically exist at the same constitutional level. Accordingly, in a CLI, it is not possible to give precedence to the rules of one of the intersecting branches based on their higher authority. Moreover, even when a legal system does establish that one commercial law branch is hierarchically superior to another, resolving a CLI on this basis is ineffective if not outright detrimental. For example, faithful to the Constitution's Supremacy Clause,[130] Article 9 provides that its provisions are preempted by any conflicting federal law.[131] Applying this rule, U.S. courts have held that the federal Copyright Act regime for "mortgages" and "hypothecations" of registered copyrights preempts the priority and perfection regime laid out by Article 9 for general intangibles.[132] Thus, this CLI between Article 9 and the Copyright Act is resolved pursuant to *lex superior*. Regrettably, such an application of federal law yields an inefficient regime that suits the needs of neither secured creditors nor debtors. Under the filing system of the Copyright Act, secured creditors are

---

legal framework); *see also* BARAK, *supra* note 19, at 75; Anja Lindroos, *Addressing Norm Conflicts in a Fragmented Legal System: The Doctrine of* Lex Specialis, 74 NORDIC J. INT'L L. 27 (2005); Koskenniemi Report, *supra* note 1, ¶¶ 56–122 (providing a comprehensive analysis of the *lex specialis* canon of interpretation in international law).

128. *See* 2 SUTHERLAND STATUTES & STATUTORY CONSTRUCTION, *supra* note 19, § 36; BARAK, *supra* note 19, at 76.

129. A set of rules bound together by interpretative criteria define a self-contained system. *See supra* Part I.A.

130. U.S. CONST. art. VI, cl. 2. The body of scholarship on the Supremacy Clause is immense. *See, e.g.*, Henry Paul Monaghan, *Supremacy Clause Textualism*, 110 COLUM. L. REV. 731, 731–34 (2010) (furnishing an exhaustive bibliography).

131. The Uniform Commercial Code provides that "this article does not apply to the extent that . . . a statute, regulation, or treaty of the United States preempts this article." U.C.C. § 9-109(c)(1); *see also* HARRIS & MOONEY, *supra* note 9, at 359–64 (analyzing exhaustively this section and the emerging preemption doctrines).

132. *See supra* notes 95–98 and accompanying text; *see also* Ward, *supra* note 90, at 420–24.

required to effectuate discrete filings for every encumbered asset, depositing the relevant transfer documents and identifying each copyright by its registration number.[133] In *National Peregrine*, recognizing the undesirable outcome produced by the *lex superior* interpretative canon in this CLI, Judge Kozinski remarked that "filing with the Copyright Office can be much less convenient than filing under the U.C.C."[134]

The preceding discourse shows that a fetishistic pursuit of legal consistency exacerbates CLI coordination problems. When internal consistency is taken as the sole criterion for addressing gaps and incongruences, the self-referential nature of each intersecting branch will be hardened. By perpetuating inner logics, the autonomous character of each branch will be bolstered. Applying such an introspective method intensifies coordination failures, rather than favoring the harmonious coalescence between intersecting branches.[135] Coextensively, when external consistency is taken as the sole criterion, one of the intersecting commercial law branches will be bluntly given primacy over the others without due regard for the CLI in its entirety. It is highly doubtful that such a mechanical method will deliver a regime that enables the parties to carry out effectively the transaction in question according to their idiosyncratic preferences. These shortcomings suggest that a different, more systematic method is necessary to navigate safely overlaps of commercial law branches and resolve their coordination failures. To this end, the notion of legal coherence is of critical support.

B. LEGAL COHERENCE

The notion of legal coherence has been theorized as a means to redress ambiguities and conflicts in the law.[136] Advocated by some as a panacea and opposed by others as an undue interference on textual interpretation, its definition, conceptual perimeter, and applicability have sparked sophisticated

133. *See* 17 U.S.C. § 205(c)–(d). These subsections govern the effectiveness against third parties of copyright transfers. Under subsection 205(d), only a recording "in the manner required to give constructive notice under subsection (c)" is good against a "later transfer." *Id.* § 205(d).

134. *In re* Peregrine Ent., Ltd., 116 B.R. 194, 202 n.10 (C.D. Cal. 1990).

135. Internal consistency is a feature that pertains to self-contained and self-referential systems of rules. Given that self-contained systems reflect sector-specific logics, internal consistency would further reaffirm such inner logics. *See* Fischer-Lescano & Teubner, *supra* note 8, at 1013 (indicating that self-contained regimes are "structurally coupled with the independent logic of the social sectors [of appurtenance]"). In turn, internal consistency pertains to self-referentiality because it supports the circular relationship between norms and decisions. *See* Teubner, *Autopoiesis in Law and Society*, *supra* note 8, at 295 (noting that a particular type of self-referentiality, termed "autopoiesis," emerges when decisions to resolve a conflict refer to criteria that are within such system); *see also* Koskenniemi Report, *supra* note 1, ¶ 450 (noting that the pursuit of the consistent interpretation of one specific treaty might be at the expense of "the consistency of the multilateral treaty system as a whole").

136. The body of scholarship exploring the notion of coherence is vast. *See, e.g.*, Hage, *supra* note 20; Bertea, *supra* note 20; Rodriguez-Blanco, *supra* note 20; Schiavello, *supra* note 20; Peczenik, *supra* note 20; Raz, *supra* note 20; Hurley, *supra* note 20; MacCormick, *supra* note 20; AARNIO, *supra* note 20; Wintgens, *supra* note 122, at 35–38.

jurisprudential discourse.[137] Drawing from such debates and with the aid of legal theory and philosophy of mathematics, it becomes apparent that coherence is a composite notion with the following three fundamental traits.

First, in logic, coherence between a plurality of deductive systems requires that they are both mutually compatible and internally devoid of contradictions.[138] Correspondingly, in law, coherence between a plurality of systems of rules and principles requires the simultaneous attainment of internal and external consistency.[139] However, internal and external consistency alone are not sufficient.

Second, for a system to be coherent its rules and logical deductions must have a "unity of purpose."[140] That is to say that it must "'hang together' or to 'make sense' as whole."[141] Coherence demands that a system of rules and principles is woven together on the basis of an ordering criterion. From a normative standpoint, this entails that the coherence is only possible when a legal system possesses overarching, guiding purposes towards the realization of which its rules and principles gravitate. Such overarching, guiding purposes may be drawn from a broad social, moral, economic, or political spectrum,[142] depending on the subject matter in question and the relevant jurisdiction.

Third, absolute coherence is unattainable.[143] Both consistency and unity of purpose can never be achieved perfectly. Regarding consistency, in logic and legal reasoning alike, it has been long established that a system can never be truly free of internal ambiguities and conflicts nor can it be complete.[144]

---

137. Bertea, *supra* note 20, at 371–72 (summarizing this debate and noting that "[w]hile there is wide agreement among contemporary legal theorists on the characterization of coherence in the negative as lack of inconsistencies, it is still a question how coherence might be defined in positive terms").

138. *See* HOFSTADTER, *supra* note 124, at 94–100 (indicating that external consistency relates to deductions that are external to the system under consideration and internal consistency relates to the mutual compatibility of logical deductions within a system). The attainment of internal and external consistency is aspirational rather than a normative prescription; inconsistency and incompleteness are inherent to logical systems. On the incompleteness theorem first formulated by Kurt Gödel, see *infra* note 144.

139. The relation between "total consistency" and "coherence" is central to Ronald Dworkin's argument and critique of legal positivism. *See* DWORKIN, *supra* note 6, at 119–27.

140. *See* MacCormick, *supra* note 20, at 236 (speaking of unity of principle); Raz, *supra* note 20, at 284 (speaking of a unified set of principles).

141. MacCormick, *supra* note 20, at 235.

142. *See id.* at 238; AARNIO, *supra* note 20, at 177–80; Schiavello, *supra* note 20, at 233–37.

143. *See* Alexy & Peczenik, *supra* note 20, at 131, 145 (noting a degree of approximation to coherence); Raz, *supra* note 20, at 286–87 (noting that absolute coherence is impossible due to the pluralistic principles underlying all legal systems); MacCormick, *supra* note 20, at 248–51.

144. In philosophy of mathematics, according to Gödel's incompleteness theorems, every system of logical deductions is necessarily incomplete; attempts to compensate such a condition would require the implementation of complex reasoning compromising the consistency among the chain of deductions. *See* KURT GÖDEL, ON FORMALLY UNDECIDABLE PROPOSITIONS OF PRINCIPIA MATHEMATICA AND RELATED SYSTEMS (Bernard Meltzer trans., Basic Books Inc. 1962). The applicability of Gödel's incompleteness theorem to law has sparked an intriguing debate. For an overview, see Mark R. Brown & Andrew C. Greenberg, *On Formally Undecidable Propositions of Law: Legal Indeterminacy and the Implications of Metamathematics*, 43 HASTINGS L.J. 1439 (1992) (arguing that Gödel's theorem indicates that law is necessarily incomplete, thus advancing a critique to legal formalism); *see also* Bavli, *supra* note 124, at 938 (indicating that the law itself contains "limitations on its capacity to realize formal consistency").

Similarly, in respect of unity of purpose, it is impossible for the totality of the rules and principles of a system to all be uniformly and consonantly aligned with its overarching guiding purposes.[145] Accordingly, coherence is scalar rather than binary in nature; between the most coherent and the most incoherent solutions there lies a field of intermediate options.

The above lends robust support to the view that a legal method to address CLI coordination failures should seek legal coherence. Attention should not be cast towards each intersecting branch discretely. Crucially, the focus should be on the intersection itself, understood as a system of logical deductions and legal rules.[146] Hence, CLI coordination failures should be confronted with the aim of ensuring that internal and external consistency are simultaneously attained through a unity of purpose.[147] Given that a CLI arises from the overlap of different branches that jointly realize a legal regime for determinate transactions, its purpose is not explicit but must be inferred. This investigation warrants careful consideration.

C. FINDING PURPOSE

Purpose is an overworked notion in legal theory. Scholars have devoted copious time and effort defining it, appraising its significance, and theorizing the approaches by which it should be extrapolated.[148] At their core, purposive methods seek to link a system of rules and logical deductions to its "true reason";[149] nevertheless, different schools of thought construe this nexus on the basis of profoundly diverse constituent components and methodologies.[150]

For the present inquiry, the purpose of a CLI should be understood as a normative concept which comprises the underlying social and economic policies and political objectives that this system is designed to attain. Regarding the sources that should be appraised to infer such purpose, two key issues require consideration. The first is the relevance that should be attributed to the textual elements of the CLI in question.

---

145. *See* MacCormick, *supra* note 20, at 245–51; Raz, *supra* note 20, at 286–87.

146. *See supra* Part I.A.

147. The significance of unity of purpose has also been recognized in international law. Specifically, it has been suggested that legal coherence in the "international legal order" should be attained by reference to established "general principles of law" that "represent a central cohesive force, revealing and reinforcing the systemic nature of the system" and "operate as a tool for intra-systemic convergence." Andenas & Chiussi, *supra* note 20, at 10–11.

148. The purposive method has deep roots in Anglo-American jurisprudence. *See* SIR JOHN BAKER, THE REINVENTION OF MAGNA CARTA 1216–1616, at 222 (2017) (noting that, by late sixteenth century, it had long been established that readers in the inns of court had "to begin their exposition of a statute by offering a historical explanation of the mischief at which it was aimed"); BARAK, *supra* note 19, at 89; Michael S. Moore, *The Semantics of Judging*, 54 S. CAL. L. REV. 151, 262–65 (1981); LON L. FULLER, THE MORALITY OF LAW (rev. ed. 1969); GIDON GOTTLIEB, THE LOGIC OF CHOICE 105 (1968).

149. This proposition can be traced back to *Heydon's Case* (1584) 76 Eng. Rep. 637, 638; 3 Co. Rep. 7 a, 7 b (Eng.), in which the English Court of Exchequer interpreted an Henrician statute concerning the dissolution of monasteries, based on its construction of the "true reason" of this law.

150. *See* POPKIN, *supra* note 5, ch. 2–3 (providing a comprehensive historical analysis and an exhaustive bibliography).

On this matter, jurisprudence theories addressing "hard cases"—within which CLIs would typically fall—provide a useful frame of reference.[151] Ronald Dworkin axiomatically posits that textual indications are insufficient and that recourse to contextual elements outside the semantic datum is necessary.[152] Similarly, Lon Fuller argues that textual elements are inherently indeterminate if examined in isolation, and suggests that an assessment of the context in which legal rules are intended to operate is always required.[153] In like manner, Aharon Barak argues that the semantic components of a rule only reveal the range of its possible meanings and suggests that the analysis of extra textual elements is always necessary.[154] Arguably, recourse to contextual elements also finds support in H.L.A. Hart's positivist approach, whenever a case falls within the "cone of penumbra" of the applicable rules and cannot be resolved on the basis of the plain meaning of the text.[155]

As CLI coordination failures are caused by gaps and incongruences between intersecting commercial law branches, it stands to reason that textual elements will generally be scarce and supply but limited indications. The search for the guiding purposes instrumental to fostering legal coherence will almost invariably have to go beyond textual elements and venture into the relevant context.

Having established that a contextual approach is required to infer the purpose of a CLI, the second issue concerns the content and boundaries of this assessment. Looking again at jurisprudence theories as a frame of reference, a rich plurality of views emerges. Ronald Dworkin broadly suggests that the relevant context from which purposes should be inferred is the "political structure" of the relevant community and in particular its principles of political morality.[156] Taking a different approach, Aharon Barak suggests that the context from which the purpose of a system of rules should be extrapolated is the combined product of the subjective intent of the legislature and the objective intent of the legal system in which it operates considered as a whole.[157]

Regarding CLIs, we submit that the contextual inquiry determinative to the extrapolation of purpose should focus on the relevant intersecting branches. As

151. *See* Ronald Dworkin, *Hard Cases*, 88 HARV. L. REV. 1057 (1975); H.L.A. HART, THE CONCEPT OF LAW 126 (3d ed. 2012) (expressing the positivist approach to hard cases); JOSEPH RAZ, THE AUTHORITY OF LAW: ESSAYS ON LAW AND MORALITY 197 (1979); Lon L. Fuller, *Positivism and Fidelity to Law—A Reply to Professor Hart*, 71 HARV. L. REV. 630 (1957) (criticizing H.L.A. Hart's dichotomy between standard cases that do not require a contextual approach and penumbral cases that warrant a broader contextual approach); Max Radin, *Realism in Statutory Interpretation and Elsewhere*, 23 CALIF. L. REV. 156 (1935) (expressing the realist approach to hard cases).

152. *See* Dworkin, *supra* note 151, at 1059–60.

153. *See* Fuller, *supra* note 151, at 661–70.

154. *See* BARAK, *supra* note 19, at 6–7, 120–22, 148–52.

155. *See* HART, *supra* note 151, at 123–26.

156. *See* Ronald A. Dworkin, *"Natural" Law Revisited*, 34 U. FLA. L. REV. 165, 165–67 (1982).

157. *See* BARAK, *supra* note 19, at xi, 110, 148 (theorizing that the context from which purpose should be inferred is expression of the internal relationship between the intent of the specific author ("subjective") and the intent of a reasonable author ("objective"); at the highest level of abstraction objective intent is "the intent of the system" it is "a legal construction that reflects the needs of society. It is an expression of a social ideal").

each CLI is a new system of rules and logical deductions that stems from two or more commercial law branches,[158] it follows that these intersecting branches offer the primary contextual datum. Hence, to identify the socio-economic goals of the CLI in question, it will be necessary to elicit the purposes of each intersecting branch. In this respect, it should be noted that some commercial law branches are characterized by statutes that declare their underlying purposes explicitly. For example, embodying Karl Llewellyn's "principle of patent reason,"[159] the Uniform Commercial Code (U.C.C.) states that its policies and underlying purposes are "(1) to simplify, clarify, and modernize the law governing commercial transactions; (2) to permit the continued expansion of commercial practices through custom, usage, and agreement of the parties; and (3) to make uniform the law among the various jurisdictions."[160]

In a similar vein, a growing number of regulatory regimes expressly state their purposes. Typically, this occurs when administrative authorities exercise their delegated powers to regulate a specific sector of the economy through "new governance" approaches.[161] New governance entails experimental regulatory structures that are polycentric, as they transcend the public-private divide by entrusting regulated entities with key regulatory functions. In this schema, the purpose of a regulatory provision is enunciated in general principles that indicate the behavior which regulated entities must adopt. Thus, the purpose is an integral component of principle-based regulation, whereby regulatory outcomes are expressly declared, while discretion as to the most suitable methods to achieve

158. *See supra* Part I.B.

159. *See* WILLIAM L. TWINING, KARL LLEWELLYN AND THE REALIST MOVEMENT 321–22 (1973) (citing a 1944 Karl Llewellyn paper stating "[t]he principle of the patent reason: Every provision should show its reason on its face. Every body of provisions should display on their face their organizing principle").

160. U.C.C. § 1-103 (AM. L. INST. & UNIF. L. COMM'N 2019). On the interpretation of the U.C.C., see generally Peter A. Alces & David Frisch, *Commenting on "Purpose" in the Uniform Commercial Code*, 58 OHIO ST. L.J. 419 (1997); Julian B. McDonnell, *Purposive Interpretation of the Uniform Commercial Code: Some Implications for Jurisprudence*, 126 U. PA. L. REV. 795 (1978); Mitchell Franklin, *On the Legal Method of the Uniform Commercial Code*, 16 LAW & CONTEMP. PROBS. 330 (1951).

161. *See* Robert F. Weber, *New Governance, Financial Regulation, and Challenges to Legitimacy: The Example of the Internal Models Approach to Capital Adequacy Regulation*, 62 ADMIN. L. REV. 783, 837–39 (2010) (critically examining the application of new governance approaches in the context of banking regulation); *see also* Julia Black, *Paradoxes and Failures: 'New Governance' Techniques and the Financial Crisis*, 75 MOD. L. REV. 1037 (2012) (advancing a critical analysis on the effectiveness of new governance techniques following the global financial crisis); Saule T. Omarova, *Wall Street as Community of Fate: Toward Financial Industry Self-Regulation*, 159 U. PA. L. REV. 411 (2011) (noting the need to redefine the interactions between public and private actors through regulatory approaches that stimulate the implementation of self-regulatory measures); Dan Awrey, *Regulating Financial Innovation: A More Principles-Based Proposal?*, 5 BROOK. J. CORP. FIN. & COM. L. 273, 285 (2011) (noting the relationship between novel principle-based approaches and "new governance"); Cristie Ford, *New Governance in the Teeth of Human Frailty: Lessons from Financial Regulation*, 2010 WIS. L. REV. 441, 445 (2010) (indicating that new governance approaches are "underpinned by a bottom-up, decentered, horizontal experimental process" involving private actors). For an application of new governance approaches in the context of FinTech, see Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 582 (2019) (arguing that some of the new approaches to regulate FinTech are an application of the new governance methods).

them is left to financial institutions.[162] Differently, "rule-based" approaches[163] are concerned with detailing the process that regulated entities must follow to attain the desired outcomes.[164]

III. A NOVEL METHOD

The preceding discourse has suggested that the attainment of coherence within CLIs is instrumental to redressing their coordination failures. This requires that the relevant rules and principles are consistent with each other and their appertaining branches, and that such consistency is attained through a set of guiding purposes inferred from both textual and contextual elements.

This Part articulates a two-step method that incorporates these critical ingredients and offers the requisite flexibility. It is designed as a normative blueprint for both interpretive and lawmaking efforts. Regarding the former, it provides a nuanced hermeneutical tool to deal with gaps and incongruences stemming from problematic CLIs. Nonetheless, courts and administrative agencies often have limited maneuvering space and are unable to escape from the strictures of the textual datum, as exemplified respectively by the decision in *National Peregrine*,[165] and the intersection between capital adequacy standards and secured transactions law.[166] Hence our method is also intended as a guide for lawmakers and regulators to avoid CLI coordination failures when articulating new laws and regulatory regimes or reforming existing ones both domestically and internationally.

For clarity and simplicity, our analysis below primarily relies on examples of CLIs that involve two commercial law branches; the additional complexities generated by the presence of multiple intersecting branches will be highlighted where appropriate.

---

162. Principle-based regulation is also referred to as "outcome-based," or "performance-based," and is distinguished from process-orientated regulation; on this distinction, see *infra* note 164.

163. In finance, principle-based regulation has been heralded as an outcome orientated approach designed to foster ethical standards in a flexible manner, whereas rule-based regulation has been typically associated with a narrow mindset of formal compliance. Such a sharp dichotomy has been criticized on different grounds. For an analysis of the main limits associated to this understanding, see Black, *supra* note 161, at 1043 (noting that regulatory regimes necessitate both principles and rules). For further on the connection between principle-based and rule-based regulation, see Cunningham, *supra* note 6, at 1426–60 (illustrating how corporate law, securities regulation, and accounting are necessarily characterized by both general principles and detailed rules).

164. Rule-based regulation is also referred to as "process-oriented," as the focus is on procedural requirements; whereas "outcome-oriented" regulation is concerned with benchmarking performance with regulatory objectives. *See* Cristie Ford, *Principles-Based Securities Regulation in the Wake of the Global Financial Crisis*, 55 MCGILL L.J. 257, 275 (2010); Cary Coglianese, *Performance-Based Regulation: Concepts and Challenges*, *in* COMPARATIVE LAW AND REGULATION: UNDERSTANDING THE GLOBAL REGULATORY PROCESS 403, 410 (Francesca Bignami & David Zaring eds., 2016) (indicating that principle-based regulation might not be always outcome-based regulation as the former has a larger scope).

165. *See supra* notes 128–134 and accompanying text.

166. *See supra* notes 93–104 and accompanying text.

A. THE FIRST STEP: DECONSTRUCTING THE CONTEXT

The preliminary operation required to address a CLI affected by coordination failures is to identify which commercial law branches are involved. The base case will typically feature two branches. For example, a transaction in which a newly formed corporate entity sells blockchain tokens that are intended to confer contractually determinate voting and participation rights to their buyers, produces a CLI between corporate law and financial regulation, including securities and capital markets law.[167] In turn, an agreement to secure an obligation using such tokens or other digital assets as collateral gives rise to a CLI between secured transactions law[168] and prudential or conduct regulation regimes.[169] In like manner, a transaction in which parties agree to create a security interest in a pool of copyright licenses, there will be an intersection between secured transactions law and copyright law.[170] More demanding cases will present CLIs that feature multiple intersecting branches. For example, a transaction in which a special purpose vehicle acquires a pool of residential mortgages and concurrently sells securities (for example, mortgage–backed securities) to investors under which it contractually promises to distribute the ensuing mortgage payments, forges a CLI amongst corporate law, mortgage law, secured transactions law, and financial regulation.[171] Similarly, a transaction in

167. *See* Shaanan Cohney, David Hoffman, Jeremy Sklaroff & David Wishnick, *Coin-Operated Capitalism*, 119 COLUM. L. REV. 591, 595–602 (2019) (analyzing exhaustively the technical and legal aspects of "initial coin offerings"); Dirk A. Zetzsche, Ross P. Buckley, Douglas W. Arner & Linus Föhr, *The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators*, 60 HARV. INT'L L.J. 267, 293–304 (2019) (expounding the regulatory challenges created by initial coin offerings); Marco Dell'Erba, *From Inactivity to Full Enforcement: The Implementation of the "Do No Harm" Approach in Initial Coin Offerings*, 26 MICH. TECH. L. REV. 175, 178–79 (2020).

168. The secured transactions law regime applicable to the use of blockchain tokens and digital assets as collateral is the subject of a nascent body of scholarship. *See, e.g.*, Heather Hughes, *Blockchain and the Future of Secured Transactions Law*, 3 STAN. J. BLOCKCHAIN L. & POL'Y 21 (2020); Kevin V. Tu, *Perfecting Bitcoin*, 52 GA. L. REV. 505 (2018); Charles W. Mooney, Jr., *Fintech and Secured Transactions Systems of the Future*, 81 LAW & CONTEMP. PROBS. 1 (2018); Teresa Rodríguez de las Heras Ballell, *A Technological Transformation of Secured Transactions Law: Visibility, Monitoring, and Enforcement*, 22 UNIF. L. REV. 693 (2017); Stephen McJohn & Ian McJohn, *The Commercial Law of Bitcoin and Blockchain Transactions*, 47 UNIF. COM. CODE L.J. 187, 210 (2017); *see also* WORLD BANK, *supra* note 15, at 25–29 (examining the potential impact of distributed ledger technology on the legal framework of the UNCITRAL Model Law on Secured Transactions).

169. To identify the applicable regulatory regime an investigation on the nature of digital asset under consideration is required. For instance, if the encumbered digital asset is classified as an investment, a CLI between secured transactions law and securities law emerges. The problem is more complex if, for instance, if the encumbered asset is a "stablecoin," that is, a digital asset backed by traditional assets. In such instances, depending on the structure, a complex nexus of intersections may arise, involving secured transactions law, payment system law, AML standards, and prudential requirements to curb credit, market, and operational risk. *See* WORLD BANK, *supra* note 15, at 25–30. On the potential stability concerns and related regulatory responses for stablecoins with a potential reach across multiple jurisdictions, see generally FIN. STABILITY BD., *supra* note 73; Arner et al., *supra* note 73.

170. *See* Andrea Tosato, *Secured Transactions and IP Licenses: Comparative Observations and Reform Suggestions*, 81 LAW & CONTEMP. PROBS. 155, 160–72 (2018) (analyzing comparatively the use of IP licenses as collateral).

171. *See* Steven L. Schwarcz, *What Is Securitization? And for What Purpose?*, 85 S. CAL. L. REV. 1283, 1295–99 (2012) (providing a general theory on securitization and an exhaustive bibliography); Tracy Lewis &

which a bank extends a loan secured by all the borrower's present and future patents yields a CLI between secured transactions law, patent law, and financial regulation.[172]

Once the intersecting commercial law branches have been identified, the first step of our method involves deconstructing the problematic CLI in question by bringing into focus both its textual and contextual elements. Regarding the former, it is necessary to determine precisely which rules and principles give rise to the coordination failures under consideration. The aim of this investigation is to chart the perimeter of the CLI and isolate its constituent parts. The resultant data are pivotal to classifying the coordination failures and appraising their intensity. For example, in relation to the CLI governing the use of copyright as collateral, this investigation would delve into both secured transactions and copyright sources of law to isolate the provisions that have caused coordination failures.[173] Similarly, for the CLI that is formed when a regulated financial institution takes security in assets other than financial collateral,[174] attention would have to be directed toward the applicable financial regulation and secured transactions laws to dissect the rules and principles that spawn the aforementioned incongruous regime.

Regarding the contextual elements, the relationship between the CLI in question and its constituent commercial law branches needs to be appreciated systematically. The aim of this assessment is to appraise the importance of the rules and principles that engender the coordination failure under scrutiny, relative to their appertaining commercial law branch. For this analysis, we suggest that each commercial law branch should be viewed as a tripartite spherical structure formed of a core, a middle sphere, and an outer sphere.[175] Every rule and principle involved in the CLI under consideration should be classified within one of these concentric spheres depending on its systemic relevance.[176] In like manner to the bands in the "coloured spectrum" that appears when passing white light through a prism,[177] the three layers of this systemization fade into one another, rather than being separated by stark demarcation lines. Accordingly, there will be borderline cases in which it will be challenging to establish exactly where a determinate rule falls within this

Alan Schwartz, *Unenforceable Securitization Contracts*, 37 YALE J. ON REG. 164 (2020) (uncovering a range of incongruences besetting the overlap that governs securitization contracts involving mortgage backed securities).

172. *See* Ward, *supra* note 90, at 429–40 (analyzing the intersection between patent law and Article 9).

173. *See id.* at 414–29 (analyzing of the intersection between the Copyright Act and Article 9); Haemmerli, *supra* note 105, at 1664–68 (emphasizing coordination failures between the Copyright Act and Article 9); Andrea Tosato, *Security Interests over Intellectual Property*, 6 J. INTELL. PROP. L. & PRAC. 93, 94–101 (2011) (analyzing this intersection under English law).

174. *See supra* note 95 and accompanying text.

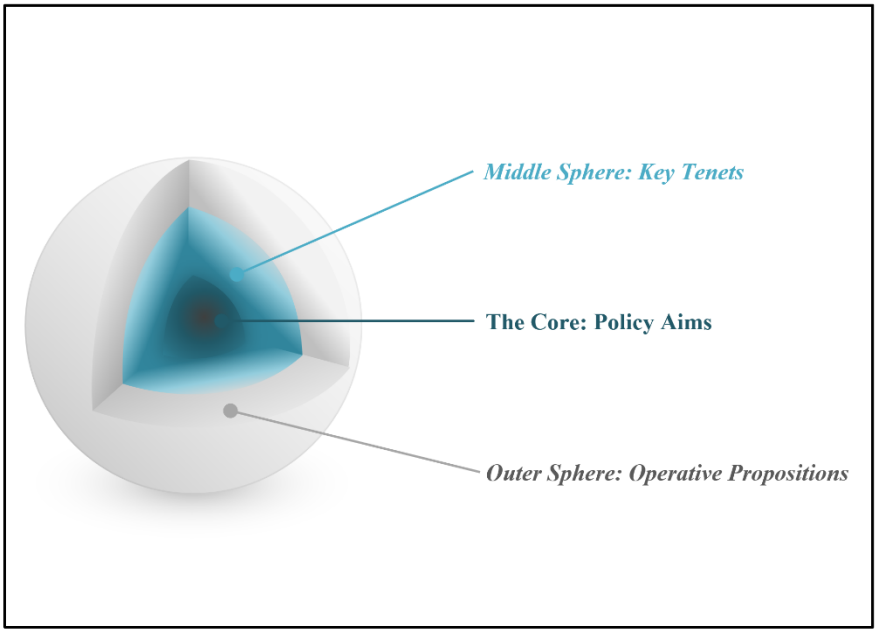
175. *See infra* Figure 1.

176. *See infra* Part III.A.1–3.

177. Between 1666 and 1672, Isaac Newton conducted experiments to study reflections, refractions, inflexions and colors of light. He observed that that white light (sunlight) passed through a prism separated into its component colors (dispersion) and formed a "coloured spectrum." *See* ISAAC NEWTON, OPTICKS: OR, A TREATISE OF THE REFLEXIONS, REFRACTIONS, INFLEXIONS AND COLOURS OF LIGHT bk. I, pt. I, prop. II., theor. II, exper. 3 (London, Smith & Walford 1704).

spherical structure. Nevertheless, this tripartition is a valuable analytical tool, as it provides a useful framework by which the causative factors of a CLI coordination failure can be contextualized within their commercial law branch. Below we explore in detail the core, the middle sphere, and the outer sphere.

FIGURE 1. COMMERCIAL LAW BRANCHES, CONCENTRIC SPHERES DIAGRAM



1. The Core: Policy Aims

In our concentric systemization of commercial law branches, the core is the nucleus encircled by the middle and outer sphere. It comprises the purposes pursued by a commercial law branch, intended as its underlying social and economic policies and political objectives. These "policy aims"[178] serve as the foundations of their system of appurtenance. They formulate the ordering criteria and shape the development of each commercial law branch. These policy aims may be extrapolated from a range of diverse sources. In some cases, they are enshrined in statutes;[179] in others, they are embedded in regulatory principles;[180] in others still, they emerge from the case law.[181] Notably, policy

178. Throughout Part III the locution "policy aims" is used to indicate the underlying social and economic policies and political objectives. Policy aims, in fact, are key to infer the purpose of a commercial law branch. *See supra* Part II.C.

179. *See supra* note 160 and accompanying text.

180. *See supra* notes 160–161.

181. See *infra* notes 206, 211 for examples of U.S. cases articulating the policy aims of copyright, patent, and trademark law respectively.

aims are not immutable and can evolve over time; any such changes will be reflected in the aforementioned textual and contextual elements.

In secured transactions law, this core has been studied extensively. Pioneered by Article 9 and increasingly embraced both domestically and internationally,[182] the "first principle" of secured transactions law is to enable debtors "to secure as much or as little of their debts with as much or as little of their existing and future property as they deem appropriate."[183] This axiom embodies a bundle of policy aims which are closely linked and mutually reinforcing. From a private law perspective, it is widely accepted that secured transactions law should recognize and honor a person's liberty to use their personal property as collateral, consistently with the normative values of freedom of contract and free alienation of property.[184] As security interests are a type of property right, debtors who grant security interests to their creditors are voluntarily disposing of their property; the law should uphold and respect such choices, both between the parties and *erga omnes*, albeit subject to appropriate limitations.[185]

From an economic perspective, the prevailing view is that secured transactions law should aim to incentivize the extension of credit.[186] Security interests are risk mitigation devices instrumental to unlocking financing that would be unavailable on an unsecured basis.[187] They afford lenders an alternative avenue to satisfy their obligations, in the event of their debtor's default. Even when not Pareto efficient[188]—typically due to non-consensual transfers of wealth from unsecured to secured creditors—the additional capital flows generated by secured loans deliver welfare gains that in aggregate

182. *See* Castellano & Tosato, *supra* note 39; Anna Veneziano, *Italian Secured Transactions Law: The Need for Reform*, *in* SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES AND PRACTICE, *supra* note 39, at 355; Rodríguez de las Heras Ballell & Feliu Rey, *supra* note 39; Fernando D. Hernández, *Secured Credits in Insolvency Proceedings in Argentina*, 9 INSOLVENCY & RESTRUCTURING INT'L 21 (2015); Neil B. Cohen, *Harmonizing the Law Governing Secured Credit: The Next Frontier*, 33 TEX. INT'L L.J. 173 (1998).

183. Steven L. Harris & Charles W. Mooney, Jr., *A Property-Based Theory of Security Interests: Taking Debtors' Choices Seriously*, 80 VA. L. REV. 2021, 2021–22 (1994). *See generally* GILMORE, *supra* note 37.

184. Harris & Mooney, *supra* note 183, at 2047–53. The authors—who served as Reporters for the Drafting Committee to Revised Uniform Commercial Code Article 9—declare that they "embrace the baseline principles that underlie current law insofar as it generally respects the free and effective alienation of property rights and the ability of parties to enter into enforceable contracts. We believe that these principles reflect widely shared normative views that favor party autonomy concerning both property and contract." *Id.*

185. *See id.* at 2047–66 (arguing forcefully in support of this thesis).

186. *See* RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW §§ 1.1–1.2 (9th ed. 2014).

187. *See* Giuliano G. Castellano, *Reforming Non-Possessory Secured Transactions Laws: A New Strategy?*, 78 MOD. L. REV. 611, 617 (2015) (noting that one of the primary economic functions of security interests in personal property is to allow lenders to "manage and mitigate credit risk").

188. In economic theory, "an allocation is Pareto efficient if there is no feasible reallocation that can raise the welfare of one economic agent without lowering the welfare of some other economic agent. The concept of Pareto efficiency can be applied to any economic allocation whether it emerges from trade, bargaining, strategic interaction, or government imposition." *Pareto Efficiency*, *in* OXFORD DICTIONARY OF ECONOMICS (John Black, Nigar Hashimzade & Gareth Myles eds., 2009). This notion was first theorized by the Italian economist Vilfredo Pareto (1848–1923).

outweigh the social costs of these dealings.[189] From a social perspective, there is growing recognition that secured transactions law should aim to bolster financial inclusion.[190] To this end, the legal framework governing secured lending should be designed to empower SMEs and underserved constituencies, whose ingenuity and entrepreneurship have traditionally been stifled by the unavailability of affordable capital.[191]

In financial regulation, the overarching purpose is to ensure that the financial system performs its primary function of allocating and deploying economic resources across industries, market participants, and over time.[192] Crucially, markets are not perfect. Their competitive dynamics do not always yield desirable and efficient allocation of economic resources. These malfunctions are commonly referred to as "market failures" and represent one of the primary justifications for public (regulatory) interventions in the financial system.[193] According to this understanding, financial regulation should pursue

189. Law and economics literature exploring secured transactions law is vast. *See, e.g.*, Brian M. McCall, *It's Just Secured Credit! The Natural Law Case in Defense of Some Forms of Secured Credit*, 43 IND. L. REV. 7, 9–12 (2009) (providing an exhaustive bibliography); F.H. Buckley, *The Bankruptcy Priority Puzzle*, 72 VA. L. REV. 1393, 1469 (1986) (submitting that secured credit lowers screening costs and that debtors are best placed to determine when giving security maximizes value); Randal C. Picker, *Security Interests, Misbehavior, and Common Pools*, 59 U. CHI. L. REV. 645, 678–79 (1992) (positing that secured credit avoids "duplicative monitoring of . . . creditor misbehavior"); David Gray Carlson, *On the Efficiency of Secured Lending*, 80 VA. L. REV. 2179, 2213 (1994) (asserting that "security interests disable the borrower from personal misbehavior"); Hideki Kanda & Saul Levmore, *Explaining Creditor Priorities*, 80 VA. L. REV. 2103, 2114–21 (1994) (advancing the idea that Article 9 priority rules efficiently address risk alteration and incentivize late-in-time marginal borrowing). Notably, the view that secured credit is efficient is not unanimously accepted. *See, e.g.*, Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy: Further Thoughts and a Reply to Critics*, 82 CORNELL L. REV. 1279, 1315–18 (1997); Elizabeth Warren, *Making Policy with Imperfect Information: The Article 9 Full Priority Debates*, 82 CORNELL L. REV. 1373, 1377 (1997); John Hudson, *The Case Against Secured Lending*, 15 INT'L REV. L. & ECON. 47, 48–52 (1995); Lynn M. LoPucki, *The Unsecured Creditor's Bargain*, 80 VA. L. REV. 1887, 1913–14 (1994); Paul M. Shupack, *Defining Purchase Money Collateral*, 29 IDAHO L. REV. 767, 773–79 (1992).

190. *See* WB KNOWLEDGE GUIDE, *supra* note 12, at 9; Giuliano Castellano & Marek Dubovec, *Global Regulatory Standards and Secured Transactions Law Reforms: At the Crossroad Between Access to Credit and Financial Stability*, OXFORD BUS. L. BLOG (May 22, 2018), https://www.law.ox.ac.uk/business-law-blog/blog/2018/05/global-regulatory-standards-and-secured-transactions-law-reforms.

191. *See* SECURED TRANSACTIONS REFORM AND ACCESS TO CREDIT (Frederique Dahan & John Simpson eds., 2008) (exploring the nexus between secured transactions law and access to credit); WB KNOWLEDGE GUIDE, *supra* note 12, at 4 (emphasizing the importance of inclusive access to credit as a core policy aim of secured transactions law); Walsh, *supra* note 17, at 181–82; Grant Gilmore, *The Secured Transactions Article of the Commercial Code*, 16 LAW & CONTEMP. PROBS. 27, 29–32 (1951); Louise Gullifer & Ignacio Tirado, *A Global Tug of War: A Topography of Micro-Business Financing*, 81 LAW & CONTEMP. PROBS. 109, 113–16 (2018); Steven L. Schwarcz, *Empowering the Poor: Turning De Facto Rights into Collateralized Credit*, 95 NOTRE DAME L. REV. 1, 1–3 (2019).

192. *See* Robert C. Merton & Zvi Bodie, *A Conceptual Framework for Analyzing the Financial Environment*, *in* THE GLOBAL FINANCIAL SYSTEM: A FUNCTIONAL PERSPECTIVE 3, 5 (Dwight B. Crane, Kennenth A. Froot, Scott P. Mason, André F. Perold, Robert C. Merton, Zvi Bodie, Erik R. Sirri & Peter Tufano eds., 1995) (indicating that the overarching socio-economic function of allocating economic resources across borders and time is realized through a sub-set of functions, including the clearing and settling of payments, the management of risks, and the deployment of capital).

193. Although other reasons, such as social solidarity, lend strong support to the implementation of regulatory policies, the market failures rationale—deploying the analytical tools of economics—is commonly

public interests (public interest theories),[194] rather than being solely molded by the interests of individuals, groups, and industries (interest group theories).[195] Through this lens, this commercial law branch provides a set of rules and principles that instill confidence in the financial system by addressing market failures. In turn, this incentivizes market participants to deploy their capital, supplying both short-term liquidity and long-term financing to the "real economy."[196] To this end, regulation should be designed to achieve two broad policy aims. First, regulatory regimes should protect the integrity of financial markets, ensuring that they operate in a fair and efficient manner.[197] This policy aim entails the safeguarding of professional and retail investors as well as savers,[198] and ramifies into the variety of regimes pertaining to conduct

considered as the main reasons justifying the regulation of financial markets. *See* ARMOUR ET AL., *supra* note 76, at 51 (noting that the key "features of *financial* markets make them . . . prone to malfunction"); Steven L. Schwarcz, *Controlling Financial Chaos: The Power and Limits of Law*, 2012 WIS. L. REV. 815, 818 (2012) (arguing that four types of market failures are inherent in the financial system and identifying them as "information failure, rationality failure, principal-agent failure, and incentive failure").

194. Public interest theories have developed around the notion that regulators are benevolent agents and that the purpose of regulation is to attain publicly desired outcomes. *See* CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE (1990) (advocating for regulation to embrace further this understanding and promote public interests). Adopting a public interest approach to identify the purposes of financial regulation does not imply that regulation could be influenced by other factors, such as lobbying from interests groups or behavioral dynamics. *See* Giuliano G. Castellano & Geneviève Helleringer, *The Social Psychology of Financial Regulatory Governance*, *in* THE POLITICAL ECONOMY OF FINANCIAL REGULATION 160 (Emilios Avgouleas & David C. Donald eds., 2019) (advancing a theory to explain how group dynamics can impact the collective decision-making process of regulatory agencies).

195. Interest group theories develop around the notion that individuals, such as market participants, regulators, or politicians, maximize their own interests. Hence, parties involved in the regulatory process seek to maximize their own utility. *See* Sam Peltzman, *Toward A More General Theory of Regulation*, 19 J.L. & ECON. 211, 214–27 (1976) (identifying the key assumptions to explain the regulatory process); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3–6 (1971) (advancing the idea that regulation is "captured" by regulated entities as they contribute to its design and interpretation for their own benefit).

196. The term "real economy" refers to that segment of the economic system concerned with the production of goods and supply of services. *Real Economy*, CAMBRIDGE DICTIONARY, https://dictionary.cambridge.org/dictionary/english/real-economy (last visited Apr. 19, 2021).

197. Market integrity, like financial stability, is an elusive concept that has witnessed a significant expansion in recent years. In general, behaviors that give rise to market integrity concerns encompass a variety of actions that may compromise the efficient functioning of financial markets, undermining the confidence of investors. *See* Janet Austin, *What Exactly Is Market Integrity? An Analysis of One of the Core Objectives of Securities Regulation*, 8 WM. & MARY BUS. L. REV. 215 (2017) (noting the connection between market integrity and fairness in the context of securities regulation); Harry McVea, *Supporting Market Integrity*, *in* THE OXFORD HANDBOOK OF FINANCIAL REGULATION, *supra* note 55, at 631, 634–35 (identifying the activities that threat market integrity and pose relevant regulatory challenges).

198. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act § 1021, 12 U.S.C. § 5511 (2018) (enumerating consumer protection among its central objectives). Some commentators consider the protection of retail customers as a policy objective with a separate standing. *See, e.g.*, Niamh Moloney, Eilís Ferran & Jennifer Payne, *Introduction*, *in* THE OXFORD HANDBOOK OF FINANCIAL REGULATION, *supra* note 55, at 1, 6. However, the protection of customers, including investors in the retail segment of financial markets, is ultimately a matter of market integrity. *See* Robert Charles Clark, *The Soundness of Financial Intermediaries*, 86 YALE L.J. 1, 13 (1976) (noting that misconduct "prevents capital suppliers [such as depositors, investors, shareholders] from knowing fully the risks actually posed by a firm, and thus may prevent markets from working perfectly"). In

regulation.[199] Second, financial regulation should be concerned with maintaining the safety of financial institutions and the stability of the financial system considered in its entirety.[200] The former aim should be achieved through micro-prudential regulation;[201] the latter, instead, should be attained through macro-prudential regulatory policies.[202]

The debate regarding the policy aims of IP law has burned passionately for centuries.[203] For copyright, one long-held view has contended that this commercial law branch is designed to grant authors absolute control over their creations because they are figments of their "personality" (personhood theory).[204] A different thesis has posited that the policy aim of copyright is to afford authors the just reward for their creative labor (Lockean labor theory).[205] A third view, of ever greater prevalence, is that the policy aim of copyright is to offer market-driven incentives to stimulate the ingenuity of authors, as the proliferation of creative works augments social welfare (utilitarian theory).[206]

2018, the Department of Justice established the Task Force on Market Integrity and Consumer Fraud, with the purpose of "combating fraud against consumers . . . and corporate fraud that victimizes the general public and the government." Press Release, Rod J. Rosenstein, Deputy Att'y Gen., Dep't of Just., Deputy Attorney General Rod J. Rosenstein Delivers Remarks Announcing the Establishment of the Task Force on Market Integrity and Consumer Fraud (July 11, 2018), https://www.justice.gov/opa/speech/deputy-attorney-general-rod-j-rosenstein-delivers-remarks-announcing-establishment-task.

199. For a definition of conduct regulation and its relationship with "compliance culture," see *supra* notes 55–56 and accompanying text.

200. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act § 112, 12 U.S.C. § 5322 (establishing the Financial Stability Oversight Council (FSOC) to maintain the stability of the U.S. financial system). See *supra* note 58 and accompanying treatise in text for the definition of macro-prudential regulation. Albeit commonly recognized as one of the central policy aims of financial regulation, financial stability is an elusive notion better understood as a condition where *in*stability is absent. *See* William A. Allen & Geoffrey Wood, *Defining and Achieving Financial Stability*, 2 J. FIN. STABILITY 152 (2006) (noting that financial stability is a state where episodes of instability are less likely to occur). Hence, the maintenance of financial stability results in limiting the occurrence and impact of systemic risk, defined as "a risk of disruption to financial services that is (i) caused by an impairment of all or parts of the financial system and (ii) has the potential to have serious negative consequences for the real economy." IMF, Bank for Int'l Settlements & Fin. Stability Bd., *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations*, Report to the G-20 Finance Ministers and Central Bank Governors 2 (Oct. 2009). For the regulatory approaches to systemic risk, see *supra* note 59 and accompanying text.

201. *See supra* note 58 and accompanying text.

202. On the distinction between micro- and macro-prudential regulation, see *supra* note 58 and accompanying text.

203. *See generally* ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 6–10 (2011) (providing a rich bibliography and a broad overview of the scholarly debate on the nature and justifications of intellectual property law); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287 (1988) (giving an exhaustive account of the theories underlying IP law).

204. *See* Christopher S. Yoo, *Rethinking Copyright and Personhood*, 2019 U. ILL. L. REV. 1039, 1041, 1045–55 (2019) (explaining the philosophical roots of this theory and its application to copyright law theory); Justin Hughes, *The Personality Interest of Artists and Inventors in Intellectual Property*, 16 CARDOZO ARTS & ENT. L.J. 81, 87–88 (1998) (analyzing this theory).

205. *See* Hughes, *supra* note 203, at 296–310 (analyzing Locke's property theory and its application to copyright law); Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1540–55 (1993).

206. Unequivocal proclamations are found in *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984); *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975); *Mazer v. Stein*, 347 U.S. 201, 219

For patent law, utilitarian theories have inexorably garnered the favor of lawmakers, scholars, and judges. Proponents of this view suggest that the aim of this IP law strand is to stimulate and reward the development, realization, and marketing of inventions for the economic and societal welfare that they generate.[207] Other theoretical justifications based on natural rights,[208] prospect theory,[209] and social justice,[210] have not gained comparable traction. Looking to trademarks law, in the nineteenth century, the generally accepted view held that this system of rules and principles was devised to safeguard producers from competitors' attempts to misappropriate their clientele with confusing and deceptive trade signs. In the twentieth and twenty-first century, lawmakers, courts, and commentators have progressively shifted to a utilitarian stance. They have embraced the theory that the policy aim of trademarks law should be to enhance the quality of information available to market participants, thereby reducing search costs and increasing both competition and efficiency.[211]

2. The Middle Sphere: Key Tenets

In our concentric systemization of commercial law branches, the middle sphere exists between the core and the outer spheres. It comprises the dispositive rules and principles that articulate the legal framework necessary to realize the policy aims of a commercial law branch. These "key tenets"[212] are generally embedded in statutory instruments but can also stem from case law. Though with

(1954); and *Wheaton v. Peters*, 33 U.S. (8 Pet.) 591, 661 (1834). *See* Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1576–77 (2009) (providing an exhaustive analysis); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989).

207. *See* Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 480 (1974) (embracing an utilitarian theory of patent law); *see also* Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 993–94 (1997) (providing a detailed explanation and an exhaustive bibliography); Alan Devlin & Neel Sukhatme, *Self-Realizing Inventions and the Utilitarian Foundation of Patent Law*, 51 WM. & MARY L. REV. 897, 897–99 (2009); David S. Olson, *Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter*, 82 TEMP. L. REV. 181, 181–84 (2009). Famously, Abraham Lincoln described the U.S. Patent system as adding "the fuel of *interest* to the *fire* of genius." Abraham Lincoln, *Second Lecture on Discoveries and Inventions (Feb. 11, 1859)*, *in* 3 THE COLLECTED WORKS OF ABRAHAM LINCOLN 356, 363 (Roy P. Basler ed., 1953).

208. *See* Mossoff, *supra* note 43, at 1313–15.

209. *See* Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 267–71 (1977).

210. *See* Peter S. Menell, *Property, Intellectual Property, and Social Justice: Mapping the Next Frontier*, 5 BRIGHAM-KANNER PROP. RTS. CONF. J. 147, 186–95 (2016).

211. *See* Qualitex Co. v. Jacobsen Prods. Co., 514 U.S. 159, 163–64 (1995) (stating that trademark law reduces the customers' costs of shopping and making purchasing decisions, while assuring producers reputational rewards associated with a strong brand); Union Nat'l Bank v. Union Nat'l Bank, 909 F.2d 839, 844 (5th Cir. 1990) (stating that trademarks lower consumer search costs, foster high quality production and impede free-riding); Stacey L. Dogan & Mark A. Lemley, *Trademarks and Consumer Search Costs on the Internet*, 41 HOUS. L. REV. 777, 778 (2004); William P. Kratzke, *Normative Economic Analysis of Trademark Law*, 21 MEM. ST. U. L. REV. 199, 214–17 (1991); William M. Landes & Richard A. Posner, *The Economics of Trademark Law Articles and Reports*, 78 TRADEMARK REP. 267, 270–72 (1988).

212. Throughout Part III the locution "key tenets" is used to indicate the rules and principles that fall within the middle sphere of a commercial law branch.

different intensity, they typically possess three traits that are interconnected and mutually influencing.

First, key tenets establish the rules and principles through which commercial law branches supplement or derogate general law or another commercial law branch.[213] In the context of banking law and regulation, for instance, key tenets of prudential regimes are constructed upon legal rules defining the relationship between depositors and the banker. As originally recognized by English common law and further elaborated upon by a rich jurisprudence developed by the U.S. Supreme Court,[214] deposits are "nothing more or less than a promise to pay, from the bank to the depositor,"[215] forming a contractual relationship that allows banks to deploy such deposits to conduct their business and earn profits.[216] This legal characterization allows banks to perform their socio-economic function within the financial system.[217] Coextensively, courts have long acknowledged that banking differs substantially from an "ordinary private business" because of its "public nature" which, in turn, demands that it be "properly subject to the police power of the state."[218] By holding a portion of the capital raised and converting most into means of production,[219] banks deploy deposits (liquid debts with no fixed maturity) to support the creation of loans (illiquid assets with long-term maturity).[220] Yet, unlike other debtor-creditor relationships, the power to receive deposits and extend loans is conferred by a special set of rules, such as those set out for federally chartered banks.[221]

In this schema, a principal-agent problem surfaces, whereby the banker (agent) tends to maximize returns from investing the money of depositors

213. *See supra* Part I.A.

214. In *Foley v. Hill*, Lord Cottenham delivered what could arguably be considered one of the most quoted decisions in banking law and stated that: "The money placed in the custody of a banker is, to all intents and purposes, the money of the banker, to do with it as he pleases . . . he is of course answerable for the amount . . . to repay to the principal, when demanded, a sum equivalent to that paid into his hands." Foley v. Hill (1848) 2 HLC 28, 36–37 (Eng.); *see* CRANSTON ET AL., *supra* note 56, at 192 (noting that "the excessive attention given to the debtor-creditor side of *Foley v. Hill* obscures the fact that the case had an important contractual basis" to explain why the depositor-banker relationship presents significant deviations from the traditional debt obligations). The contractual nature of the relationship emerges more clearly from U.S. case law. *See supra* note 211 and accompanying text.

215. Citizens Bank v. Strumpf, 516 U.S. 16, 21 (1995).

216. *See* Bank of Marin v. England, 385 U.S. 99, 101 (1966) ("The relationship of bank and depositor is that of debtor and creditor, founded upon contract."); Shaw v. United States, 137 S. Ct. 462, 466 (2016) ("When a customer deposits funds, the bank ordinarily becomes the owner of the funds and consequently has the right to use the funds as a source of loans that help the bank earn profits . . . .").

217. *See generally* Merton & Bodie, *supra* note 192 (discussing core functions of the financial system).

218. Schaake v. Dolley, 118 P. 80, 83 (Kan. 1911).

219. *See, e.g.*, CARNELL ET AL., *supra* note 59, at 66–67; ARMOUR ET AL., *supra* note 76, at 277.

220. From an aggregate perspective, each time a loan is extended, a corresponding deposit is created; therefore, loans generate deposits that, in turn, are the primary form of purchasing power. *See* Castellano & Dubovec, *supra* note 1, at 70 (indicating that liquidity and maturity transformation are key functions to support the creation of credit and purchasing power in the modern economic system). For the function of deposits as a particular form of debt, see CARNELL ET AL., *supra* note 59, at 67.

221. *See* National Bank Act, 12 U.S.C. § 24 (2018) (explaining that traditional banking powers also include discounting and negotiating promissory notes, and "loaning money on personal security").

(principals) in order to increase its own profits.[222] Corporate structures and compensation mechanisms may incentivize this behavior, leading bankers to take excessive risk or disfavoring prudent risk-management.[223] As depositors are exposed to potential losses without having the power to monitor the conduct of the banker, a problem of moral hazard emerges.[224] To maximize the value of the firm, bank managers and shareholders are incentivized to take more risk than what would be optimal from the standpoint of social welfare and, thus, compromising safety and soundness aims.[225] The key tenets of prudential regulation are thus designed to redress the misalignment of incentives between bankers and depositors. They depart from general rules, for instance, by introducing the principle of "stakeholders' supremacy,"[226] by indicating that remuneration structures should support sound risk-management,[227] or by establishing coefficients and formulae to determine the amount of own funds that a bank must maintain for each given risk exposure.[228] The resulting

222. On the principal-agent problem in general, see the seminal work, Sanford J. Grossman & Oliver D. Hart, *An Analysis of the Principal-Agent Problem*, 51 ECONOMETRICA 7 (1983).

223. Mechanisms to compensate managers for short-term results are typically considered to heighten the principal-agent problem. *See* Lucian A. Bebchuk & Jesse M. Fried, *Paying for Long-Term Performance*, 158 U. PA. L. REV. 1915 (2010). The debate is particularly lively in the context of bonuses accorded to managers. *See* Andreas Kokkinis, *Exploring the Effects of the 'Bonus Cap' Rule: The Impact of Remuneration Structure on Risk-Taking by Bank Managers*, 19 J. CORP. L. STUD. 167 (2019) (providing an exhaustive analysis of the problem and its regulatory approaches).

224. In economic theory, moral hazard is inherent to principal-agent relationships and it is defined as a problem of "hidden action," given that the action of the agent cannot be observed and contracted upon by the principal. *See* Bengt Holmström, *Moral Hazard and Observability*, 10 BELL J. ECON. 74, 74 (1979) ("The source of this moral hazard . . . is an asymmetry of information among individuals that results because individual actions cannot be observed and hence contracted upon.").

225. On the threats that governance mechanisms might pose to the safety and soundness of firms and markets, see John Thanassoulis & Misa Tanaka, *Bankers' Pay and Excessive Risk* 1 (Bank of Eng., Staff Working Paper No. 558, 2015), https://ssrn.com/abstract=2674040; Emilios Avgouleas & Jay Cullen, *Excessive Leverage and Bankers' Pay: Governance and Financial Stability Costs of a Symbiotic Relationship*, 21 COLUM. J. EUROPEAN L. 1, 2–6 (2015) (highlighting the connection between bank's corporate governance, managers' compensation mechanisms, and financial stability).

226. For financial firms, the principle of "shareholders' supremacy"—arguably, a key tenet of corporate law—is often superseded by the principle of "stakeholders' supremacy." In banking, this principle is enshrined in international standards. *See* BASEL COMM. ON BANKING SUPERVISION (BCBS), BANK FOR INT'L SETTLEMENTS, CORPORATE GOVERNANCE PRINCIPLES FOR BANKS 3 (2015), https://www.bis.org/bcbs/publ/d328.pdf ("[W]ith respect to retail banks, shareholders' interest would be secondary to depositors' interest."). Notably, in some jurisdictions, this normative shift from shareholders' supremacy to stakeholders' supremacy has started to reflow from financial regulation into corporate law. *See* David Kershaw & Edmund Schuster, *The Purposive Transformation of Company Law*, 68 AM. J. COMPAR. L. (forthcoming 2021) (manuscript at 2), https://ssrn.com/abstract=3363267 (analyzing recent U.K. company law reforms and suggesting that these interventions both facilitate the emergence of "purposeful companies" and enable "a reordering of corporate priorities, away from an immediate and ever-present priority for shareholders and (variably) towards employees, customers, suppliers and other stakeholders").

227. *See, e.g.*, 31 C.F.R. § 30.16(b)(1) (2019) (limiting the compensation attributed to executives, and other highly paid persons, of firms that received public assistance). For a comparative analysis of different regulatory approaches, see Kokkinis, *supra* note 223.

228. For key function of capital requirements, see Castellano & Dubovec, *supra* note 1, at 71 ("[C]apital requirements control the quantity of credit circulating in the economy by binding its creation to an amount of equity that is proportionate to the level of risk acquired by each bank."). For a detailed analysis of these mechanisms, see CARNELL ET AL., *supra* note 59, at 238–59.

regulatory framework supplements contract and corporate law rules, stemming from common law tradition,[229] to address moral hazard, by ensuring that banks have some "skin in the game,"[230] and achieve stated policy aims.

The second trait, closely linked to the first, is that key tenets articulate the fundamental concepts and doctrines of their appertaining system. For example, in secured transactions law, they govern the central aspects of creation, perfection, priority, and enforcement of security interests. Regarding the former, under Article 9, one such key tenet postulates that a person may create a security interest that encumbers one or all their present and future assets (floating lien),[231] and secures any or all present or future obligations owed to a creditor.[232] Similarly, across IP laws, key tenets dictate the cardinal elements of the legal framework governing subject matter, protection requirements, scope of protection, alienability, and enforcement. For example, key tenets of the Lanham Act provide that trademarks holders have the exclusive right to "use in commerce" their registered "mark" and censure any person who causes a likelihood of confusion,[233] dilution,[234] cybersquats,[235] or engages in false advertising.[236]

The third trait is that key tenets are typically expressed at a high level of generality and abstraction. Notable examples are: the general obligation to perform and enforce contracts in good faith established by the U.C.C.,[237] the "rule of reason" in antitrust law,[238] the requirement that "works of authorship"[239] must be original[240] to be protected by copyright, and the obligations of financial

229. *See* DALVINDER SINGH, BANKING REGULATION OF UK AND US FINANCIAL MARKETS 83–84 (2007) (noting that the common law position on the relationship between a bank and its customers establishes a scant protection for depositors, thus offering solid justification for the establishment of a regulatory framework).

230. Prudential regimes are designed both to limit excessive risk-taking and to enhance the loss-absorption capacity of banks. *See* ARMOUR ET AL., *supra* note 76, at 290–315; SCOTT & GELPERN, *supra* note 59, at 504–74.

231. U.C.C. § 9-204 cmt. 2 (AM. L. INST. & UNIF. L. COMM'N 2020); *see also* HARRIS & MOONEY, *supra* note 9, at 39–43.

232. U.C.C. § 9-204(c); *see also* GILMORE, *supra* note 37, at 917–18.

233. *See* 15 U.S.C. § 1114.

234. *See id.* § 1125(c).

235. *See id.* § 1125(d).

236. *See id.* § 1125(a)(1).

237. U.C.C. § 1-304; *see also* ROBERT S. SUMMERS, *The Conceptualization of Good Faith in American Contract Law*, *in* ESSAYS IN LEGAL THEORY 299 (2000) (providing an extensive bibliography); Andrea Tosato, *Commercial Agency and the Duty to Act in Good Faith*, 36 OXFORD J. LEGAL STUD. 661 (2016) (providing an E.U. law perspective).

238. The antitrust body of scholarship on the rule of reason is vast. *See* Herbert Hovenkamp, *The Rule of Reason*, 70 FLA. L. REV. 81 (2018) (providing an exhaustive analysis).

239. 17 U.S.C. § 102(a). U.S. CONST. art I., § 8, cl. 8 only mentions "writings," yet this word has been given a broad interpretation. *See* The Trade-Mark Cases, 100 U.S. 82, 94 (1879) (exploring the notion of "writings" and stating they "may be liberally construed"); Goldstein v. California, 412 U.S. 546, 561 (1973) (stating that "writings" may include "any physical rendering of the fruits of creative intellectual or aesthetic labor").

240. *See* 17 U.S.C. § 102(a); *Goldstein*, 412 U.S. at 566 (suggesting originality is the very premise of copyright law); Menell, *supra* note 210, at 174–75.

immediacies to act in the "best interest of clients."[241] This "vague" and "open-textured" nature is instrumental to the function that key tenets have within commercial law branches and in their dialogue with policy aims and operative propositions.[242] As observed by Timothy Endicott and Michael Spence, this:

> (i) allows the application of the standard to correspond to its purpose, without the arbitrariness of precision,
>
> (ii) enables the regulation of activities that simply cannot be regulated with precision, and
>
> (iii) can be a useful technique for allocating decision-making power and encouraging forms of private ordering that promote the purposes of the law.[243]

3. The Outer Sphere: Operative Propositions

In our concentric systemization of commercial law branches, the outer sphere encircles the middle sphere and forms the outmost layer of the entire structure. It comprises rules and principles that build upon the concepts and doctrines forged by the underlying key tenets. Albeit in varying measure, these "operative propositions"[244] have a narrow scope and govern their subject matter with a high level of determinacy. They are generally enshrined in statutory instruments and delegated administrative enactments but can also stem from judicial decisions. This outer sphere is residual in nature, containing all the rules and principles of a commercial law branch that fall neither in the core nor in the middle sphere.

---

241. The duty of acting in the best interest of clients has been traditionally defined in the context of investment-advisory relationships. *See* SEC v. Cap. Gains Rsch. Bureau, Inc., 375 U.S. 180, 201 (1963). For a cogent analysis, see Arthur B. Laby, SEC v. Capital Gains Research Bureau *and the Investment Advisers Act of 1940*, 91 B.U. L. REV. 1051, 1053 (2011) (noting that "the SEC and the courts have constructed a towering regulatory edifice" to establish fiduciary duties on advisers). Internationally, the duty to pursue the best interest of clients is enshrined in Principle 2 of the International Organization of Securities Commissions (IOSCO). *See* Int'l Org. of Sec. Comm'ns [IOSCO], *International Conduct of Business Principles* (1990), https://www.iosco.org/library/pubdocs/pdf/IOSCOPD8.pdf; Luca Enriques & Matteo Gargantini, *The Expanding Boundaries of MiFID's Duty to Act in the Client's Best Interest: The Italian Case*, 3 ITALIAN L.J. 485, 486–88 (2017) (noting that the duty to act in the best interest of clients originated in the United Kingdom and only subsequently was absorbed in the IOSCO principles and in the European Union). For a comparative perspective on the fiduciary duties in the banking sector, see Ruth Plato-Shinar, *Law and Ethics: The Bank's Fiduciary Duty Towards Retail Customers*, *in* RESEARCH HANDBOOK ON LAW AND ETHICS IN BANKING AND FINANCE 214 (Costanza A. Russo, Rosa M. Lastra & William Blair eds., 2019) (indicating the need for expanding existing regimes to impose fiduciary duties towards banks' retail clients); Geneviève Helleringer & Christina Skinner, *Conflict of Interests: Comparing Compliance and Culture in the United States and the United Kingdom*, *in* GOVERNANCE OF FINANCIAL INSTITUTIONS 489, 493–96 (Danny Busch, Guido Ferrarini & Gerard van Solinge eds., 2019) (highlighting that, both in the United States and in the United Kingdom, fiduciary duty laws perform fundamental regulatory functions).

242. *See* Diver, *supra* note 14; Gunningham & Sinclair, *supra* note 14, at 856 (noting that a principle-based approach "leads policymakers to assess their decisions against a set of design criteria that form the basis of reaching preferred policy outcomes").

243. Timothy Endicott & Michael J. Spence, *Vagueness in the Scope of Copyright*, 121 L.Q. REV. 657, 665 (2005).

244. Throughout Part III the locution "operative proposition" is used to indicate the rules and principles that fall within the outer sphere of a commercial law branch.

The legal regime governing transfers of patents offers an illustrative example of both the nature of operative propositions and their dialogue with key tenets. Under the Patents Act, key tenets state that "patents shall have the attributes of personal property" and expressly recognize that they can be assigned, licensed, and mortgaged; moreover, they also state that third party effectiveness of such transactions is conditional on their recordation in the special registry held by the U.S. Patent and Trademarks Office (patent registry).[245] Operative provisions flesh out the framework articulated by these key tenets, by establishing form requirements for these dealings, default and mandatary rules affecting their substance, and a public notice regime for their third party effectiveness. Specifically, operative provisions in the Patent Act provide that alienations must be in writing and signed; furthermore, they specify which information needs to be recorded in the patents registry and the process that must be followed.[246]

Similarly, in financial regulation, an example of operative provisions in the outer sphere is furnished by the rules that have a direct applicability in the compliance framework of financial institutions. Know Your Customer (KYC) rules—requiring financial institutions to collect, monitor, audit, and analyze relevant information about customers and potential customers—offer a good illustration of the mechanics characterizing operative propositions. In their insistence that firms perform due diligence on their clients, KYC requirements are essential to the realization of market integrity objectives.[247] Together with the customer due diligence regime (CDD),[248] they define a rule-based regime regulating the processes that financial intermediaries must follow to pursue the best interest of their clients (key tenet) and, thus, instill confidence in the financial system (policy aim).

---

245. 35 U.S.C § 261.

246. *See* 37 C.F.R. §§ 3.11–3.28 (2019).

247. KYC is designed to prevent that the proceedings deriving from illicit activities channeled into the financial system. See, for example, the requirement to verify the identity of account holders in the Patriot Act, Pub. L. No. 107-56, § 326, 115 Stat 272, 298–320 (2001) and the reporting requirements established with the Bank Secrecy Act, Pub. L. No. 91-508, 84 Stat. 1114-4 (1970) (codified as amended in scattered sections of 12 U.S.C., 18 U.S.C., and 31 U.S.C.). For an overview of KYC rules in the United States, see Genci Bilali, *Know Your Customer–Or Not*, 43 U. TOL. L. REV. 319, 325–26 (2012) (noting how the need to codify KYC rules became more urgent to address emerging societal concerns, such as drug trafficking and terrorist activities). At the international level, see FIN. ACTION TASK FORCE, INTERNATIONAL STANDARDS ON COMBATING MONEY LAUNDERING AND THE FINANCING OF TERRORISM & PROLIFERATION: THE FATF RECOMMENDATIONS 14–15 (2020), https://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF%20Recommendations%202012.pdf (proposing Recommendation 10, in particular, on customers' due diligence).

248. Financial institutions are required to "understand the nature and purpose of the customer relationship in order to develop a customer risk profile," in addition to performing "ongoing monitoring for the purpose of identifying and reporting suspicious transactions." Fed. Deposit Ins. Corp. (FDIC), Financial Institution Letter, Bank Secrecy Act: Customer Due Diligence and Beneficial Ownership Examination Procedures 2 (May 11, 2018), https://www.fdic.gov/news/financial-institution-letters/2018/fil18026.pdf. The juxtaposition of anti-money laundering and risk-management goals indicates that regulators tend towards a broader understanding of KYC rules, albeit commentators prefer to consider CDD a distinct set of rules. *See, e.g.*, SCOTT & GELPERN, *supra* note 59, at 1262–64.

B. THE SECOND STEP: FOSTERING LEGAL COHERENCE

Our suggested systemization of commercial law branches has shown that CLIs can be viewed as the junctures at which the spheres of intersecting commercial law branches come into contact. Observed in this light, coordination failures are the result of gaps and incongruences between policy aims, key tenets, and operative propositions belonging to different commercial law branches. Equipped with this understanding, the second step of our method turns its attention to fostering legal coherence.

Below we divide CLI coordination failures into two broad categories. The differentiating factor is whether or not a core sphere is involved. This division reflects our view that the path to legal coherence—in terms of the assessments to be conducted, the considerations to be pondered, and the range of possible solutions to be adopted—varies markedly if the CLI coordination failure in question implicates the policy aims of one of the intersecting branches.

1. Coordination Failures Involving Policy Aims

The first category comprises coordination failures that involve policy aims. There are two types of such failures: "multi-core" and "single-core."

Multi-core CLI coordination failures are characterized by gaps or incongruences that stem from tension between the core spheres of two or more of the converging branches. Though it is unlikely that commercial law branches with fundamentally conflicting policy aims will develop and co-exist within a single legal order, frictions may arise within circumscribed facets of their scope of application.

One such example is provided by the overlap of antitrust law and insurance law in the ambit of disaster risk financing.[249] Specifically, co-insurance arrangements may generate tensions between the socio-economic policy aim to expand the capacity of private insurers to absorb losses generated by large-scale hazards, and that of antitrust law to protect competition by preventing unreasonable restraints of trade.[250]

249. Disaster risk financing encompasses a variety of risk-sharing arrangements involving public institutions and private (non-state) actors, including and in particular financial institutions. For an overview of these arrangements in the context of catastrophic losses that are generate by natural hazards, see Giuliano Castellano, *Governing Ignorance: Emerging Catastrophic Risks—Industry Responses and Policy Frictions*, 35 GENEVA PAPERS ON RISK & INS.: ISSUES & PRAC. 391 (2010); Alberto Monti, *Climate Change and Weather-Related Disasters: What Role for Insurance, Reinsurance and Financial Sectors*, 15 HASTINGS W.-NW. J. ENV'T L. & POL'Y 151 (2009).

250. The problem affects different jurisdictions in different ways. *See* Castellano, *supra* note 249, at 408–10 (noting that a strict application of antitrust law might block the development of a market for first-party property insurance covering disaster risks). In the United States, McCarran-Ferguson Act of 1945 reserves regulation of insurance business to the states, thus largely exempting the insurance industry from federal antitrust law. *See* 15 U.S.C. §§ 1011–1015. However, incongruences between the due regulatory system and disaster risk financing remain. *See* Christopher C. French, *Dual Regulation of Insurance*, 64 VILL. L. REV. 25, 65–66 (2019) (noting, for instance, that states cannot impose specific coverages, including those for "natural disasters").

When faced with CLI coordination failures of this nature, fostering legal coherence will require particularly delicate interventions. There are in fact two possible scenarios that may materialize.

In the first, grievances between the core spheres of two or more intersecting branches will be symptomatic of an overt incompatibility of their underpinning social, economic, and political objectives. Here, the path to legal coherence will necessitate a prioritization of the policy aims of one branch over those of another. Such policy trade-offs are commonplace in a variety of domains. Administrative agencies are often mandated to balance competing objectives;[251] in the context of financial regulation, this is frequently necessary when stability, competitiveness,[252] and innovation[253] are pursued simultaneously. The crucial normative decision will be to determine precisely the extent to which certain policy aims should be favored over others. For this assessment, recourse to technical factors, cost-benefit analyses, risk-assessments, or broader considerations regarding societal preferences will be inevitable.

In the second scenario, discord amid the core spheres of intersecting branches in question will not be the product of overt incompatibility of their underpinning social, economic, and political objectives. In such instances, legal coherence will call for interventions that mitigate and de-escalate frictions, while maintaining equilibrium and alignment amongst the underlying policy aims of the commercial law branches involved.[254]

Single-core CLI coordination failures are conceptually less challenging than multi-core ones. They are characterized by gaps or incongruences that stem from tension between the policy aims of one commercial law branch and the key tenets or the operative provisions of another. When grappling with such CLI coordination failures, two elements identified in our preceding analysis should be borne in mind. First, the purpose of a CLI is a function of the core of each one of the intersecting branches.[255] Second, policy aims have the utmost systemic relevance in shaping their appertaining commercial law branch.[256] Accordingly, if the policy aims of one commercial law branch are hindered or negated in a CLI due to tension with key tenets or operative proposition of another intersecting branch, this will likely produce profoundly detrimental effects both in the CLI and the affected branch. This observation lends robust support to the view that, where a coordination failure arises because the core of

251. *See* ARMOUR ET AL., *supra* note 76, at 52 (noting that, in financial regulation, conflicts between objectives are not uncommon and to resolve them preferences among policy aims should be clearly defined).

252. On the balance between financial stability and competition policies in the banking sector, see generally Allen N. Berger, Leora F. Klapper & Rima Turk-Ariss, *Bank Competition and Financial Stability*, 35 J FIN. SERVS. RSCH. 99 (2009).

253. On the trade-offs that FinTech engenders towards market integrity and financial innovation, see Brummer & Yadav, *supra* note 15, at 242 ("[W]hen seeking to (i) provide clear rules, (ii) maintain market integrity, and (iii) encourage financial innovation, regulators can achieve, at best, two out of these three objectives.").

254. For an example of such interventions, see BARAK, *supra* note 19, at 363–70.

255. *See supra* Part II.C.

256. *See supra* Part III.A.1.

one branch conflicts with the middle or the outer spheres of another, interventions aimed at fostering legal coherence should presumptively seek to prioritize the former. Nevertheless, such prioritization will demand caution. Care will be necessary to ensure that interventions that favor the policy aims of one branch over the key tenets or operative propositions of another do not overreach to the point of compromising the policy aims of the latter.

The history of the CLI that emerges between antitrust law and patent law in "cross-licensing arrangements"[257] among competitors offers an illustrative example of a single-core coordination failure and the interventions required to address it.[258] In the past, these transactions sparked tension between the policy aims of antitrust law (for example, preventing competitors from entering into anticompetitive arrangements) and key tenets of patent law (for example, the right of patent holders to freely license their patents).[259] From the 1960s to 1990s, there was ambiguity regarding the extent to which firms competing in the same markets could enter into patent cross-licensing. Such arrangements were positively permitted under patent law, but also attracted the scrutiny of antitrust law.[260] Following this phase of uncertainty caused by gaps in the applicable law, the solution adopted by most jurisdictions was to carry out legislative and regulatory interventions that have progressively prioritized antitrust concerns.[261] These reforms were typically driven by the normative assessment that the potential detrimental effect of unconstrained patent cross-licensing agreements on competition law was deemed to markedly exceed the negative impact on patent law of a mild curtailment of the otherwise unrestricted right to license held by patent-holders.

2. Coordination Failures Not Involving Policy Aims

The second category comprises coordination failures that do not involve policy aims. There are two types of such failures: "different-sphere failures" and "same-sphere failures."

Different-sphere failures are characterized by gaps or incongruences that stem from tensions between the middle sphere of one of the intersecting branches and the outer sphere of the other. When addressing coordination failures of this nature, a path to legal coherence similar to that suggested above

257. Herbert Hovenkamp, *Antitrust and the Patent System: A Reexamination*, 76 OHIO ST. L.J. 467, 530–36 (2015) (defining patent cross-licensing arrangements as "situations in which product-producing firms agree to share technologies for some part of their production without fixing product prices or dividing the product market").

258. *See* HERBERT HOVENKAMP, MARK D. JANIS, MARK A. LEMLEY, CHRISTOPHER R. LESLIE & MICHAEL A. CARRIER, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §§ 34.2a–42b (2d ed. 2010 & Supp. 2014) (providing an exhaustive analysis of this topic).

259. See Hovenkamp, *supra* note 257, at 532 (expounding all the scenarios in which cross-licensing agreements create tension with antitrust policies).

260. *Id.* at 533–35. The literature and case law are exhaustively covered in HOVENKAMP ET AL., *supra* note 258, § 34.

261. For a U.S. perspective, see HOVENKAMP ET AL., *supra* note 258, § 34. For an E.U. perspective, see DEVDATTA MALSHE, PATENT POOLS, COMPETITION LAW AND BIOTECHNOLOGY 38 (2018).

for single-core failures should be followed. Specifically, it should be borne in mind that key tenets articulate the fundamental concepts and doctrines of their appertaining commercial law branch,[262] and they establish the rules and principles through which commercial law branches express their exceptional and supplemental nature.[263] This suggests that where a coordination failure arises because of tension between the middle sphere of one commercial law branch and the outer sphere of another, interventions aimed at fostering legal coherence should presumptively prioritize key tenets over the intersecting operative provisions.

An example of the negative consequences that can occur when operative provisions are carelessly prioritized over key tenets was provided in Part II.A. There, we discussed the CLI between secured transactions law and copyright law which materializes when this intellectual property right is used as collateral.[264] We noted that the application of the *lex superior* canon of construction results in the prioritization of copyright law operative provisions (the Copyright Registry recordation regime for transfers) over key tenets of secured transactions law (the perfection regime of Article 9).[265] The resulting regime positively hinders the use of copyright as collateral: it prevents parties from relying on the efficient Article 9 regime and forces them instead to follow the rules of Copyright law, which are sub-optimal for secured transactions.[266]

By contrast, same-sphere failures feature gaps or incongruences caused by a conflict or tension between rules and principles that both belong either to the middle sphere or the outer sphere of the intersecting branches. These two cases present similarities as well as dissimilarities. They are similar in that they involve a contraposition of rules and principles belonging to spheres of the same type. They diverge in that the two cases under consideration generate challenges that differ in nature and intensity. When CLI coordination failures feature conflicts or tensions between key tenets, the rules and principles in play are cornerstones of their respective commercial law branch. By contrast, when operative provisions become embroiled, the structural impact for the intersecting commercial law branches is less profound. The combination of these characteristics weighs heavily against any intervention aimed at prioritizing one set of rules and principles over the other, as neither one has greater significance either in their appertaining branch or in the CLI in question.

When a prioritization does not offer a viable solution, fostering legal coherence in the CLI must follow a different path. Specifically, its unity of purpose should be extrapolated from the policy aims of the intersecting branches. Resolving this type of coordination failure requires that rules and

262. *See supra* Part III.A.2.

263. *See supra* Part III.A.2.

264. *See supra* notes 128–132 and accompanying text.

265. *See supra* notes 131–132 and accompanying text.

266. This regime was criticized by Judge Kozinski as "a serious burden" in *In re Peregrine Ent., Ltd.*, 116 B.R. 194, 202 n.10 (C.D. Cal. 1990). *See* Haemmerli, *supra* note 105, at 1694–95 (providing scorching criticism of the regime resulting from the intersection between the Copyright Act and Article 9).

principles within the CLI are in alignment with the underpinning social, economic, and political objectives of all intersecting branches.[267] Nonetheless, the available maneuvering space and the methods that can be deployed to ensure such co-existence of rules differ markedly, depending on the spheres involved and on the features of the rules and principles generating incongruences and gaps. Legal coherence between key tenets may often be achieved through interpretive interventions that take advantage of their open-texture and abstract nature.[268] By contrast, rules with a narrower scope and greater determinacy might often necessitate legislative reform or regulatory interventions.[269]

The aforementioned CLI engendered by secured transactions law and prudential regulation offers an illustration of the method required to address coordination failures not involving policy aims. As discussed, loans that are collateralized with personal property may be treated in the same guise of unsecured credit under applicable capital requirements.[270] The consequences of this incongruent treatment of secured credit are far-reaching, possibly distorting the incentive structure in the credit market.[271] Yet, this coordination failure does not entail conflicts or tensions between core spheres. Inclusive access to credit, promoted through secured transactions law,[272] presupposes and supports the safety and soundness of markets and institutions pursued by prudential regulation.[273] Therefore, rules and principles pertaining to these different branches should co-exist within a CLI the purpose of which is to promote a "sound and inclusive access to credit."[274] Normatively, this understanding has powerful implications. First, approaches designed to limit the applicability of existing regulatory regimes to secured lending should be avoided, as they would result in a de-regulatory action, unduly compromising the internal consistency of capital regulation and, thus, frustrating their ability to reach stated policy aims.[275] Second, coherence can only be attained through legislative and regulatory interventions that resolve incongruences by designing a system of

267. See *supra* Part II.C on the need for developing a purposive method to address CLI coordination failures.

268. Albeit not a necessary condition, key tenets are typically expressed at high level of generality. *See supra* Part III.A.2. For some examples in this regard, see *supra* notes 237–242 and accompanying text.

269. This is a direct consequence of the trade-offs between flexibility and determinacy. *See supra* note 14 and accompanying text.

270. *See supra* note 95 and accompanying text.

271. *See supra* notes 102–103 and accompanying text.

272. *See supra* note 187 and accompanying text.

273. *See supra* notes 198–200 and accompanying text.

274. This guiding purpose reflects the combined application of the policy aims underlying the intersecting branches under consideration. Promoting simultaneously financial inclusion and stability policies has been recommended in Castellano & Dubovec, *supra* note 17, at 539 (indicating that a false dichotomy between this policy aims may hinder the design of approaches that foster their advancement). Crucially, this recommendation is a reflected goal of the World Bank to promote the establishment of "a sound and inclusive credit ecosystem" when secured transactions and prudential regulation are implemented at the domestic level. *See* WB KNOWLEDGE GUIDE, *supra* note 12, at 31.

275. On the notion of consistency, see *supra* notes 121–122 and accompanying text. As noted, resolving CLI coordination failures through a method solely focused on preserving the consistency within one branch is likely to compromise the consistency of other intersecting branch(es). *See supra* note 133.

rules and principles that coordinates the legal and the regulatory facets of secured credit.[276]

CONCLUSION

In this Article we have offered three contributions to the study of CLIs and their coordination failures. First, we have reviewed the factors that have driven the proliferation of convergences between commercial law branches, as well as the increase in the relevance of these overlaps for an expanding group of business actors. Moreover, we have delved into coordination failures, showing that their root causes are gaps and incongruences in the law, the ultimate consequences of which are higher transaction costs and distortions of market incentive structures.

Our second contribution has been to apply a legal theory lens to CLI coordination failures. This perspective has provided us with robust arguments in support of the thesis that legal coherence should be adopted as the guiding star to reconcile tensions between commercial law branches. To this end, attention should focus on the CLI in view of overcoming coordination failures by ensuring that the relevant rules and principles are consistent both with each other and their respective branches, and that such consistency is attained through a unity of purpose.

Our third contribution has been to propose a normative blueprint, comprising a two-step method to address CLI coordination failures. The first step suggests a systemization to identify precisely the intersecting rules and principles and appraise their systemic relevance within their appertaining commercial law branch. The second step expounds the assessments to be conducted, the factors to be weighed, and the range of possible interventions that may be carried out to achieve legal coherence in the CLI under consideration.

Collectively, these contributions are intended to have a twofold impact. At the most basic level, we want to offer an analytical framework that the legal community can employ to identify transactions which involve CLIs, recognize the presence of coordination failures, and appraise their severity.

At a broader level, we aspire to spark a reasoned discussion. Scholars, judges, and practitioners alike are too often seduced by the temptation of dealing superficially with CLIs suffering from coordination failures. In some cases, they intentionally choose not to engage with the relevant gaps and incongruences. In

276. *See* Giuliano G. Castellano & Marek Dubovec, *Bridging the Gap: The Regulatory Dimension of Secured Transactions Law Reforms*, 22 UNIF. L. REV. 663, 684 (2017) ("A comprehensive regulatory strategy, rather than *ad hoc* interventions, is required to unlock the full potential of secured transactions law reforms."); Castellano & Dubovec, *supra* note 1, at 64 ("[C]oordination between secured transactions law and prudential regulation, particularly capital requirements, should be addressed at the highest level of the lawmaking process—notably, when international soft-laws are defined."); WB KNOWLEDGE GUIDE, *supra* note 12, at 31 ("Coordination between secured transactions law reforms and prudential regulation requires designing a jurisdiction-specific reform strategy for implementation."). The IFC Regulatory Report further elaborates on this point, indicating that "mere tweaks or abolishment of existing domestic rules" are not sufficient to resolve current incongruences, and a strategy "to ensure coherence among legal and regulatory components supporting the credit ecosystem" must be devised. IFC REGULATORY PRIMER, *supra* note 12, at 11.

others, they apodictically advocate that one of the commercial law branches in the intersection under consideration should prevail over the others, often motivated by partisan reasons of convenience. We posit that CLIs should be understood as systems of rules and logical deductions, the coordination failures of which can only be conquered through the careful investigation of the underlying socio-economic policies and political objectives of the intersecting branches.

***